

Technical Report 1109

**An Annotated Bibliography of Recruiting
Research Conducted in the U.S. Armed Services
and in Foreign Services**

Lisa M. Penney, Martha J. Sutton, and Walter C. Borman
Personnel Decisions Research Institutes, Inc.

March 2001

20010510 071



**United States Army Research Institute
for the Behavioral and Social Sciences**

Approved for public release; distribution is unlimited.

**U.S. Army Research Institute
for the Behavioral and Social Sciences**

A Directorate of the U.S. Total Army Personnel Command

**EDGAR M. JOHNSON
Director**

Research accomplished under contract
for the Department of the Army

Personnel Decisions Research Institutes, Inc.

Technical Review by

Paul A. Gade
Peter Legree

NOTICES

DISTRIBUTION: Primary distribution of this Technical Report has been made by ARI. Please address correspondence concerning distribution of reports to: U.S. Army Research Institute for the Behavioral and Social Sciences, Attn: TAPC-ARI-PO, 5001 Eisenhower Ave., Alexandria, VA 22333-5600.

FINAL DISPOSITION: This Technical Report may be destroyed when it is no longer needed. Please do not return it to the U.S. Army Research Institute for the Behavioral and Social Sciences.

NOTE: The findings in this Technical Report are not to be construed as an official Department of the Army position, unless so designated by other authorized documents.

REPORT DOCUMENTATION PAGE

1. REPORT DATE (dd-mm-yy) March 2001		2. REPORT TYPE Final		3. DATES COVERED (from... to) January 1980 - January 2000	
4. TITLE AND SUBTITLE An annotated bibliography of recruiting research conducted in the U.S. Armed Services and Foreign Services				5a. CONTRACT OR GRANT NUMBER DASW01-98-D-0047	
				5b. PROGRAM ELEMENT NUMBER 0602785A	
6. AUTHOR(S) Lisa M. Penney, Martha J. Sutton, & Walter C. Borman (Personnel Decisions Research Institutes, Inc.)				5c. PROJECT NUMBER 20262785A790	
				5d. TASK NUMBER 255	
				5e. WORK UNIT NUMBER C01	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Personnel Decisions Research Institutes, Inc. 100 South Ashley Drive - Suite 775 Tampa, Florida 33602				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army Research Institute for the Behavioral and Social Sciences ATTN: TAPC-ARI-RS 5001 Eisenhower Avenue Alexandria, Virginia 22333-5600				10. MONITOR ACRONYM ARI	
				11. MONITOR REPORT NUMBER Technical Report 1109	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution is unlimited.					
13. SUPPLEMENTARY NOTES Contracting Officer's Representative: Peter J. Legree					
14. ABSTRACT (Maximum 200 words): This is an annotated bibliography of research conducted on military recruiting by the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI), the other U.S. military services, and foreign military organizations. To provide a framework for the research summaries, they are organized around a model of military recruitment showing the important factors contributing to successful recruiting. The model contains the following factors: (1) personnel selection and assessment; (2) training and development; (3) recruiting management and organization; (4) recruiter performance; (5) marketing; (6) youth supply, characteristics, and influencers; (7) propensity; (8) enlistment decisions; and (9) delayed entry programs. One hundred fifty-one reports are summarized, describing recruiting research most relevant to the current U.S. military recruiting environment. It is hoped that the review provides a comprehensive yet concise picture of the research results generated by the U.S. Army, Navy, Marine Corps, Air Force, and foreign service recruiting research communities.					
15. SUBJECT TERMS recruiter, enlistment, recruiter performance/production, recruitment model, youth supply, enlistment propensity, delayed entry program					
SECURITY CLASSIFICATION OF			19. LIMITATION OF ABSTRACT Unlimited	20. NUMBER OF PAGES 129	21. RESPONSIBLE PERSON (Name and Telephone Number) Peter J. Legree (703)617-0307
16. REPORT Unclassified	17. ABSTRACT Unclassified	18. THIS PAGE Unclassified			

Technical Report 1109

**An Annotated Bibliography of Recruiting
Research Conducted in the U.S. Armed Services
and in Foreign Services**

Lisa M. Penney, Martha J. Sutton, and Walter C. Borman
Personnel Decisions Research Institutes, Inc.

**Selection and Assignment Research Unit
Michael G. Rumsey, Chief**

**U.S. Army Research Institute for the Behavioral and Social Sciences
5001 Eisenhower Avenue, Alexandria, Virginia 22333-5600**

March 2001

**Army Project Number
20262785A790**

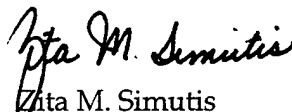
**Personnel Performance and
Training Technology**

Approved for public release; distribution unlimited.

FOREWORD

The current Army recruiting environment is extremely challenging. Army jobs are becoming more diverse and technically sophisticated, and there is a continuing need to attract highly qualified youth to join the Army. In today's competitive marketplace, with its many employment opportunities, the Army is experiencing a difficult time meeting quotas for enlistment. The U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) is dedicated to working with the U.S. Army Recruiting Command (USAREC) to provide a research base in support of enhancing the effectiveness of the recruitment process and the strategies used to attract youth. As part of this ARI support effort, an annotated bibliography was prepared to organize research findings pertaining to military recruitment practices.

The purpose of the annotated bibliography is to document past recruiting research conducted by ARI, other U.S. services, and foreign military organizations. It summarizes 151 reports pertaining to: recruiter personnel selection and assessment; training and development; recruiting management and organization; recruiter performance; marketing, youth supply, characteristics, and influencers; propensity; enlistment decision; and delayed entry programs. A comprehensive but brief summary of the key findings is presented for each referenced report. This information can be used to find what is known from past work and to identify research questions and issues that merit future examination. The contents and implications of this report were briefed to the Recruiting Research Consortium on 25 January 2001.


Zita M. Simutis
Technical Director

AN ANNOTATED BIBLIOGRAPHY OF RECRUITING RESEARCH CONDUCTED IN THE U.S. AND FOREIGN ARMED SERVICES

EXECUTIVE SUMMARY

Requirement:

The purpose of this annotated bibliography is to describe the recruiting research conducted by the four U.S. military services and foreign services. The articles reviewed are focused on : (1) personnel selection and assessment; (2) training and development; (3) recruiting management and organization; (4) recruiter performance; (5) marketing; (6) youth supply, characteristics, and influencers; (7) propensity; (8) enlistment decisions; and (9) delayed entry programs. This review was conducted as part of the U.S. Army Research Institute for the Behavioral and Social Sciences' (ARI) effort to provide a research base to support the effectiveness of the Army's recruitment process.

Procedure:

U.S. Army research is represented by the literature reviewed in a previous report (Penney, Horgen, & Borman, 2000). To identify research from the other U.S. services, we conducted searches in several available databases. Additionally, our staff worked with ARI and other military research personnel to identify and obtain access to foreign service recruiting research. In all, 643 reports on military recruiting were identified and screened for their relevance to the current U.S. military recruiting environment. Annotated bibliographies were prepared for 151 of these reports, along with a general discussion of the 9 topics listed above.

Findings

The military recruiting research reviewed in this report examined a variety of factors that influence recruiter production. Much of the information contained in these studies can be used to inform decisions about how to improve recruiting. For example, results from personnel selection studies and recruiter surveys suggest that it is important to select only those individuals who possess the personality and motivation necessary to be successful as a recruiter. Second, studies indicate two-year colleges and technical schools represent a largely untapped market for recruiting high-quality youth and propose that expanded recruiting efforts in these markets may prove fruitful. Third, the armed forces would be wise to establish a greater presence on the Internet, given its capabilities to reach large numbers of youth at a fraction of the cost of traditional advertising media. This will become progressively more crucial as Internet use among American youth continues to rise. Finally, recruiting efforts might be aided by policy changes that reduce the military-civilian pay ratio, provide for shorter enlistment contracts, and establish partnerships with colleges to create opportunities for youth to enlist in a service and enroll in college.

Utilization of Findings:

This annotated bibliography describes recruiting research most relevant to the current U.S. military recruiting environment. The recruiter production model the research reports are organized around, along with the abstracts summarizing important results related to each element of the model should be useful for informing recruiting practice and for suggesting areas requiring additional research.

Table of Contents

Introduction.....	1
Description of the Literature Searched.....	1
Search Results	2
Total for each Service.....	4
Highlights from the Annotated Bibliography.....	6
Personnel Selection and Assessment.....	6
Training and Development.....	7
Recruiting Management and Organization.....	7
Recruiter Surveys.....	7
Policy Management.....	8
Evaluating and Enhancing Recruiter Performance.....	8
Marketing.....	9
Youth Supply, Characteristics, and Influencers	10
Youth Supply	10
Youth Characteristics	11
Youth Influencers	11
Propensity	11
Enlistment Decision.....	12
Delayed Entry Program (DEP).....	13
Conclusions	13
References	15
Personnel Selection & Assessment.....	16
Training and Development	28
Recruiting Management & Organization.....	33
Evaluating & Enhancing Recruiter Performance	48
Marketing	55
Youth Supply, Characteristics, & Influencers	62
Propensity.....	89
Enlistment Decision.....	97
DEP Stay/Leave	106
Index of Literature Reviewed.....	111

Introduction

Personnel Decisions Research Institutes (PDRI) has identified and reviewed military recruiting research reports and prepared two annotated bibliographies of the major findings. These projects were conducted as part of the U.S. Army Research Institute for the Behavioral and Social Sciences' (ARI) effort to provide a research base to support the effectiveness of the Army recruitment process. The first report from PDRI (Penney, Horgen, & Borman, 2000) documented recruiting research conducted by ARI from 1980-1999. That report presented a model of the Army's recruitment process, and the ARI technical reports were then reviewed and summarized within each of the model's components (e.g., recruiter performance, training and development of recruiters, etc.). That is, the model provided an organizing framework for the annotated bibliography.

The second project represented a follow-up effort to review and summarize research articles and technical reports focused on recruiting in the *other* U.S. services and in foreign recruiting commands. The project was organized much like the previous one in that the annotated references were categorized based on their relevance for different components of the recruiting process model developed for the first report and subsequently modified by ARI.

There were four major activities involved in the second project. First, searches were conducted to identify military recruiting research reports from U.S. and foreign services. Second, the reports were classified according to the revised model of military recruitment developed by ARI and PDRI. Third, reports were selected for annotation according to their quality and the relevance of the results to the current recruiting environment. Considerable attention was also given to ensuring that the reports included in the bibliography were representative with respect to content area, methodology, and service represented. Fourth, the reports were then presented in an annotated bibliography format along with a description of the major findings.

For the present report, the annotations from the original U.S. Army bibliography (Penney et al., 2000) have been combined with results from the second, other-services bibliography (Penney, Sutton, & Borman, 2000) to provide a comprehensive overview of military recruiting research. A review of the integrated findings appears in the Highlights and Conclusions sections presented later in the report.

Description of the Literature Searched

U.S. Army research is represented specifically by the literature reviewed in the initial bibliography. ARI staff identified and selected the Army research reports they felt were critical for that original project. In order to identify research from *other services*, PDRI conducted searches in available databases including the Defense Technical Information Center (DTIC), Scientific and Technical Information Network (STINET), the International Military Testing Association (IMTA), civilian and military academy libraries, and the Internet. Additionally, PDRI staff worked with ARI and other military research personnel to identify and obtain access to foreign service recruiting research. Six hundred forty three reports on military recruiting were identified. However, after an initial review, 230 were excluded because ARI or the U.S. Army conducted the research, and those reports would have been targeted in the first project. This second search effort focused on other service and foreign service research exclusively.

Several criteria were developed to select the best and most relevant "other-service" research for full annotation and to limit the number of reports reviewed. The project team reviewed DTIC or article abstracts of the remaining 413 reports and eliminated those that were: (1) irrelevant to today's recruiting problems (e.g., reports about the draft, youth attitude surveys prior to approximately 1996); (2) relatively dated (i.e., pre-1985), unless the topic was not time-sensitive and seemed important for today's recruiting environment (e.g., personal characteristics of successful recruiters); and (3) what appeared to be poorly conducted research. Based on these criteria, 87 reports were selected, annotated, and included in the second bibliography. The 64 Army reports reviewed in the first bibliography were then integrated for this project.

Next we briefly review the military recruitment model used in this report as a framework for organizing the recruiting research. As mentioned previously, the PDRI model developed and used for the original Army research bibliography (Borman, Horgen, & Penney, 1999) was later modified by ARL. As a result, the revised model contains new categories (e.g., recruiting management and organization) that were not included in the original. The revised recruitment model (Figure 1) suggests that the enlistment decision and DEP completion, which represent the key recruiter production indicators, are a function of youths' propensity to enlist and recruiter performance. Youths' propensity to enlist is in turn a function of youth supply, characteristics, and influencers, as well as the military's marketing efforts. Recruiter performance is dependent on three factors: the recruiters' individual or personal characteristics, which can be identified through the selection and assessment process, the training and development recruiters receive, and the management and organization of the recruiting process, including the delayed entry process.

Search Results

The number of reports reviewed and annotated from each service, by model category, appears in Table 1. The majority of reports reviewed for the second project were written either for all of the U.S. Armed Forces or for the U.S. Army. Of the 643 reports, 36.7% were generated for all services and 35.8% focused on the Army, more than any other individual service.

Fully 72% of the reports produced for the entire U.S. Armed Forces were directed toward characteristics of the national youth market, such as supply, propensity, enlistment decision, and the influencers of this target group. Moreover, 57% of all reports across services investigated some aspect of the youth market. This is not surprising because the national youth market is the target population for all U.S. Armed Forces recruiting. Knowledge of the changing characteristics of this group is, therefore, important for all U.S. military recruiting efforts.

The research conducted by the U.S. Army was diverse, covering a variety of recruiting topics. For example, although predominantly focusing on the youth population, Army research also placed a larger emphasis on recruiter selection and performance than the other services. The Army also investigated marketing and enlistment propensity issues more frequently than any other single U.S. service, and conducted research on recruiter training and development. No research was located on training and development from any of the other services. Because the recruiting management and organization category was not included in the original recruiting model, no Army research related to this category was reviewed and annotated.

Figure 1. Model of Military Recruitment

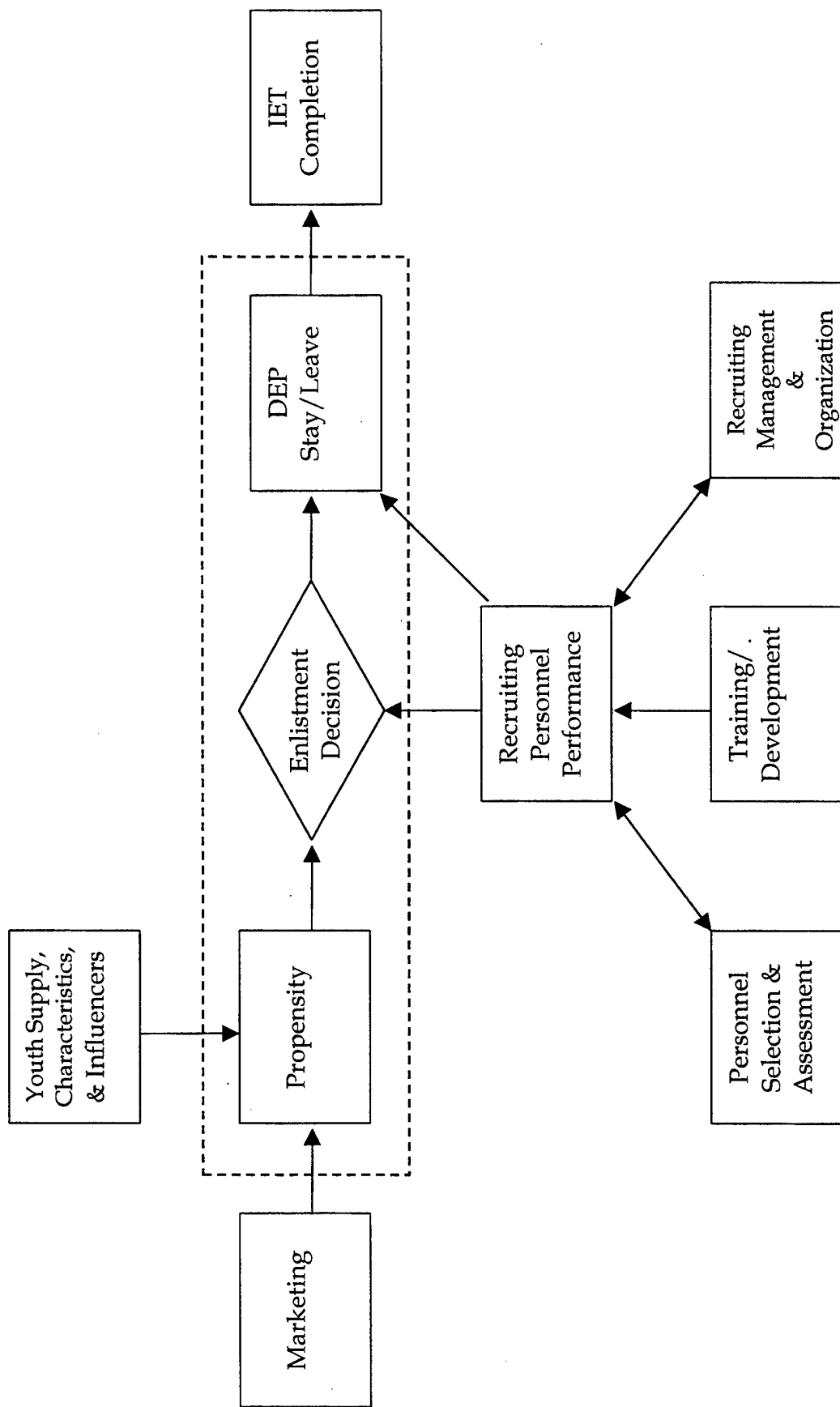


Table 1. Summary of Recruiting Research by Service and Model Category.^a

Model Category	U.S. Army	U.S. Navy	U.S. Marines	U.S. Air Force	All U.S. Forces	Foreign Service	Total
1. Personnel Selection & Assessment	11 (18)	5 (8)	3 (3)	1 (1)	1 (1)	---	21 (31)
2. Training/Development	6 (9)	---	---	---	---	---	6 (9)
3. Recruiting Management & Organization	--- (39)	9 (43)	--- (1)	--- (6)	7 (38)	4 (4)	20 (131)
4. Evaluating and Enhancing Recruiter Performance	7 (17)	4 (8)	--- (2)	---	2 (5)	---	13 (32)
5. Marketing	5 (19)	2 (8)	---	2 (4)	2 (19)	---	11 (50)
6. Youth Supply, Characteristics, & Influencers	13 (61)	9 (53)	1(4)	1 (3)	12 (117)	4 (4)	40 (242)
7. Propensity	9 (27)	--- (5)	---	---	10 (45)	---	19 (77)
8. Enlistment Decision	10 (33)	1 (9)	---	1 (1)	2 (8)	---	14 (51)
9. DEP Stay/Leave	3 (7)	3 (10)	---	---	1 (3)	---	7 (20)
Total for each Service	64 (230)	33 (144)	4 (10)	5 (15)	37 (236)	8 (8)	151 (643)

^a Table includes the numbers of annotated reports and, in parentheses, the total numbers of reports reviewed.

The U.S. Navy research was also fairly diverse, covering topics in nine out of the ten model categories, with particular emphases on recruiting management and organization issues, and youth market characteristics. Similar to the Army, the Navy also generated more research on recruiter selection and performance than the other services. Additionally, studies of Delayed Entry Program (DEP) attrition were more prevalent in the Navy than in the other services.

The literature search identified fewer reports from the U.S. Air Force and Marine Corps. Of the ten Marine Corps studies noted in the search, four examined youth supply, characteristics, and influencers; most of these studies were conducted, however, in the late 1970s and early 1980s. More recent research was available from the U.S. Air Force, which explored youth characteristics and marketing activities targeted toward this population. There were a limited number of foreign service reports identified; they covered recruiting management and organization, and youth supply, characteristics, and influencers.

In sum, most recruiting research dealt with some aspect of the national youth market, including propensity. However, the other components of the recruitment model received at least a limited

amount of research attention, most notably recruiting management and organization and marketing.

Highlights from the Annotated Bibliography

As mentioned, the military recruitment model developed by ARI and PDRI contained ten categories. The following section provides a brief summary of the research reports included in the annotated bibliographies, organized by model category.

Personnel Selection and Assessment

Selection research for military recruiters has focused primarily on identifying personal characteristics (i.e., personality traits, vocational interests, or other personal attributes) that may contribute to recruiter success. Typically, these personal characteristics are examined through test validation research; that is, recruiters complete tests or other measures of potentially relevant characteristics, the same recruiters' job performance is measured, and their test scores are correlated with their job performance scores. A significant correlation between a personal characteristic and job performance indicates that the characteristic is important for recruiter performance.

Research by the U.S. Army, Navy, Marine Corps, and Air Force has shown very low correlations between general cognitive ability (or intelligence) and performance as a recruiter. Instead, evidence suggests that personal characteristics and vocational interests are more critical for successful recruiter performance. The Navy and Marine Corps identified specific personal traits and vocational interests directly related to recruiter performance requirements. The personality traits found to be most important were exhibitionism, spontaneity, ambition, confidence, planfulness, and organizing skill. The most important vocational factors were interests in law and politics, sports and competitive activities, and extroverted, dominant, and leadership activities (Borman, Rosse, & Toquam, 1978; Borman Rosse, Toquam, & Abrahams, 1981). Composite scales of personality and vocational interest items produced respectable validities against "bottom line" production criteria (i.e., the number of contracts signed), as well. In the Army, a similar measure of personality and vocational interests produced lower validities against production criteria, but validities improved when correlated against an awards received criterion (Weiss, Citera, & Finfer, 1989). A U.S. Air Force validation study identified the following personality traits as being important for recruiter performance: assertiveness, empathy, self-regard (awareness of strengths and weaknesses), problem-solving ability, happiness/optimism, interpersonal relations, emotional self-awareness, and reality testing (GAO, 1998). This recruiter selection research has been reasonably successful in identifying the personal characteristics associated with recruiters' performance.

Other research conducted on behalf of the Army has shown the following personal characteristics predict effective recruiter performance: sociability, personal impact, empathy, behavioral maturity, organization, work orientation, self-control, practical judgment, reading and learning ability, energy level, persuasiveness, resistance to stress, confidence, and flexibility. An assessment center consisting of role-plays and an in-basket was subsequently developed to evaluate these characteristics and produced strong validities against training performance in the Army Recruiter Course (Borman, 1982; Borman & Fischl, 1980).

In spite of these promising findings the U.S. General Accounting Office (GAO) reported in 1998 that the Air Force was the only U.S. service to screen recruiters for the personal characteristics

thought to be necessary for recruiting success. All potential Air Force recruiters complete personality tests and are interviewed to evaluate communication skills as part of the selection process. In contrast, the Army and Navy focus primarily on past job performance in non-recruiting positions when selecting recruiters (GAO, 1998). Thus, although research has identified personal characteristics important for recruiter performance, it appears that, with the exception of the Air Force, these research findings have not been practically applied.

Training and Development

As stated previously, the literature search yielded training and development research only from the U.S. Army. Several reviews of the Army's recruiter training program have been conducted. The Army Recruiter Course and its instructors have generally received favorable evaluations (Hull, Kleinman, Allen, & Benedict, 1988; Hull & Nelson, 1991). The recommendations derived from the research have focused on three areas. First, a greater emphasis should be placed on salesmanship skills and on real world problems such as handling rejection and coping with the pressure to make mission. The use of realistic job previews to help retain recruiters and improve their performance was also proposed. Realistic job previews may give recruiters a better idea of what to expect in the field, facilitating their transition to the job and reducing stress. Evaluations of the Army's on-the-job recruiter training were not as positive, however. Recommendations for improving on-the-job training included standardizing the content and delivery of the training program, developing a mentoring program, and emphasizing the importance of on-the-job training for new recruiters in the Station Commander Course (Pond, Powell, Norton, & Thayer, 1992).

Recruiting Management and Organization

In addition to recruiter selection and training, the recruitment model indicates that the organizational context for recruiting, including management support, represents important factors affecting recruiter performance. The research included in this section falls into one of two categories: recruiter survey results and discussions of policy or management strategies to improve recruiting. No Army research related to recruiting management and organization was reviewed and annotated because this category was not specified in the original recruiting model

Recruiter Surveys

The DoD and the U.S. Navy have conducted regular surveys of active-duty recruiters to measure their attitudes toward recruiting duty, job satisfaction, and perceived quality of life. In general, respondents agree that recruiting has become an increasingly difficult job (Baker, Somer, & Murphy, 1989; Condon, Dunlap, Girard, Sundel, & Feuerberg, 1997; Zucker & George, 1999). The most salient problem identified is the amount of stress experienced by recruiters. Sources of stress include long working hours, the pressure to make what many perceive are unrealistic goals, the belief that recruiting success could make or break their careers, and lack of support from and intimidation by supervisors. As a result of these pressures, recruiters reported medical problems, strains on their personal and family lives, and even considerations of suicide. Respondents frequently mentioned the need to screen potential recruiters for the personality and motivation necessary to be effective. A study of the best performing U.S. Navy recruiting districts, however, indicated that they: (1) had good management support systems

and effective leadership, communication, and teamwork; (2) take care of people (recruiters and potential recruits); and (3) take pride in the Navy, are professional, and make goal with integrity (Hirabayashi & Hersh, 1989).

Policy Management

The current recruiting difficulties are not unique to the U.S. Armed Forces. Military services in other nations, such as New Zealand, Canada, the Netherlands, Australia, and the United Kingdom report similar problems. For example, many describe recruiting environments wherein the youth supply is shrinking, youth interest in military service is declining, and it is increasingly difficult to attract higher quality youth to meet the escalating military technical demands (Bennett, 1999; Matser, 1996; Okros, 1999).

Through research, the U.S. and foreign services have identified several potentially useful policy or management strategies to address these difficulties. For example, increasing advertising and offering more educational incentives, greater compensation, and shorter service contracts were presented as options to generate interest in the services among youth (Asch, Kilburn, & Klerman, 1999; GAO, 1994; Sellman, 1999). Other potential solutions included providing recruiters with more modern equipment and facilities, enhancing administrative support, increasing the number of recruiters (however, a GAO report argued that increasing advertising would be more cost-effective), improving the selection and training of recruiters, and improving recruiter management of enlistees in the DEP (GAO, 1994).

Additional policy approaches reviewed target new directions (e.g., creating online recruiting stations; outsourcing administrative functions, recruit screening, and/or telemarketing functions to civilian organizations). To more effectively compete for high quality youth, the U.S. Office of the Secretary of Defense is examining partnering with two-year colleges and technical schools to offer associate degrees in return for a commitment to enlist (Sellman, 1999). Other management strategies looked more broadly at the overall human resource systems that support recruiting, suggesting that improvements in selection, training, and development service-wide would increase job satisfaction among enlisted personnel and decrease attrition. These outcomes would, in turn, alleviate some of the pressure to obtain new recruits to replace those who leave the service (Alderton, Blackstone, Mottern, & Watson, 1999). Also discussed were the need for military personnel systems that can closely monitor the environment to anticipate future needs, and that are flexible enough to respond to rapid changes (Okros, 1999).

Evaluating and Enhancing Recruiter Performance

There is no question that recruiter performance, that is, the effort put forth by individual recruiters to reach and influence qualified candidates, plays a critical role in attracting youth into military service. A Navy study identified eight categories that capture the most important recruiter performance requirements. Those categories are: (1) locating and contacting qualified prospects; (2) gaining and maintaining rapport; (3) obtaining information from prospects and making good person-Navy fits; (4) salesmanship skills; (5) establishing and maintaining good relationships in the community; (6) providing knowledgeable and accurate information about the Navy; (7) administrative skills; and (8) supporting other recruiters and the Command. These can be viewed as the performance-factors that distinguish between effective and ineffective

recruiters (Borman, Hough, & Dunnette, 1976). Subsequent Army research found that the Navy performance dimensions were adequate to describe Army recruiter performance, as well (Borman, Russell, & Skilling, 1986).

Regarding attempts to improve recruiters' performance, U.S. services have used both individual and group incentive programs, with awards for both quantity and quality of recruits. However, several reports criticized the use of individual recruiting goals for actually discouraging recruiters from working for accessions after reaching goal (Dertouzos, 1984; Pry, 1996). That is, although recruiters may be motivated to meet their goal, they generally do not exceed it because there is no incentive to do so. Moreover, one study indicated that team goals are better than individual goals to increase enlistment rates (Barfield, 1993).

Researchers have also examined the impact of other factors on recruiter performance. For example, some research indicates that recruiter ethnicity and gender may affect recruiter accomplishment. Specifically, recruiters are generally more successful recruiting individuals of the same ethnicity, and female recruiters are more successful with female recruits than their male counterparts, although the reverse is not true for recruiting males (Barfield, 1993). Finally, a number of studies have found that, in addition to recruiter effort, the unemployment rate, military-to-civilian pay ratio, and local youth population size all influence enlistment rates (Borman, Rosse, & Toquam, 1982; Brown, 1984; Dale & Gilroy, 1985a; Daula & Smith, 1986; Dertouzas, 1984; Donelan, 1977; Goldberg & Greenston, 1986; Horne, 1984; Murray & McDonald, 1999).

Marketing

Marketing and advertising are important mechanisms to make the target population aware of military career opportunities. Marketing studies generally fall into one of two categories: (1) those that examine advertising effectiveness; and (2) those that identify advertising media most likely to reach the target youth market. Studies of advertising effectiveness typically examine the cost-effectiveness of advertising against various criteria [e.g., the number of youth exposed to an advertisement, youth slogan recognition, or the number of enlistment contracts presumably generated by the ad (Eskins, 1997; Hintze & Lehnus, 1996; Tannahill, 1996)]. Overall, research across services indicates that advertising is an effective means of communicating to the target population relative to each of these criteria. Additionally, one study reported that advertising expenditures were significantly related to the number of leads generated (Tannahill, 1996). Specifically, advertising expenditures were significantly related to the number of phone calls made to an 800-number displayed in advertisements.

Research to identify the appropriate media for military advertising has generally employed youth surveys and focus groups to discover media habits. Recent studies of youth media habits indicate that youth spend more time watching television and listening to the radio than they do utilizing other media sources such as newspapers and magazines (Hintze & Lehnus, 1998). Internet use among American youth is also on the rise. One U.S. Air Force study revealed that more youth would visit the Air Force website than would contact a recruiter if they were considering an Air Force career (Research Services, 2000). This suggests that the Internet may be an increasingly important tool to communicate military career opportunities to the target market. Additionally, an Army study found that different aspects of the Army message were

recalled with different media (Baxter & Gay, 1988). For example, video ads were more effective in communicating messages pertaining to high-tech equipment, experiences to be proud of, and the opportunity to develop one's potential, whereas money for education was communicated more effectively in print ads.

Youth Supply, Characteristics, and Influencers

The largest number of research investigations reviewed focused on the supply of potential military recruits, their characteristics, and those factors that influence their enlistment decisions. Because all of the U.S. services compete for the same youth market, research findings from one service can easily be generalized to the other services. Therefore, the findings are presented here in terms of all U.S. services.

Youth Supply

The population of service-aged youth (18-23) is expected to increase through 2004, although it will remain below 1980 levels for the next decade. Analyses indicate that the target population is becoming more diverse and the number of youth scoring in AFQT categories I-IIIa is expected to be 48.9% in 2010 as compared to 51.4% in 1980 (Ree & Earles, 1991). Nonetheless, the data indicate that, despite population declines, enlistment supply was adequate to meet the reduced accession goals through 1996, suggesting that prior recruiting difficulties were not supply driven. Since that time declining population has combined with lower levels of propensity to exacerbate military recruiting problems. These difficulties are expected to continue for the foreseeable future, particularly for officers and specialized technical positions (Hagerty, Zucker, & Lehnus, 1999; Ree & Earles, 1991; Verdugo & Berliant, 1989). The studies indicate that models of enlistment supply should include youth population size, unemployment rate, military to civilian pay ratio, number of recruiters, their goals, the presence of other recruiting services, enlistment bonuses, and educational benefits (Barnes, Dempsey, Knapp, Larro, & Schroyer, 1991; Borman, Rosse, & Toquam, 1982; Daula & Smith, 1986; Goldberg & Greenston, 1986; Murray & McDonald, 1999). Also, in estimating supply and setting goals, analyses should be conducted at the district or battalion ($N \cong 40$) rather than the area or brigade ($N = 5-6$) level (Barnes, et al., 1991). This is because smaller geographical territories are more homogeneous with respect to some of these environmental factors.

Two-year colleges and technical schools appear to provide an underutilized market for military recruiting for a number of reasons. These institutions offer concentrated numbers of potentially high quality recruits. College students are generally of higher quality than youth planning military or civilian careers, have lower attrition rates after induction, and may be more amenable to military service as a result of career uncertainty (Shavelson, Haggstrom, & Blaschke, 1984). Several recommendations were advanced to reach this market. Partnerships might be developed between the military and community colleges (e.g., college degrees tailored to high tech specialties) that could be beneficial for both (Golfin, 1998). Recruiters should be familiar with the college environment (e.g., provide tuition assistance for recruiters to attend college, thereby increasing their familiarity with college life, as well as the military's visibility on campuses) and should try to track youth for a longer period of time after high school graduation (Golfin, 1998). Perhaps not surprisingly, Australia has found that cadets at military schools provide a good recruiting source (McAllister, 1995).

Youth Characteristics

Comparisons of the attitudes of college-bound, civilian-bound, and military service-bound high school seniors found that service-bound youth report more pro-military attitudes than do their non-service-bound peers (Bachman, Freedman-Doan, Segal, & O'Malley, in press). The two groups do not differ, however, in values. Additionally, although some reports indicate that the supply of youth available for military service will be of lesser quality, one found that Army servicemen had higher educational aspirations than their civilian counterparts (Friedland & Little, 1984). Furthermore, Black and Hispanic males in the military averaged more years of education than did their civilian peers (Friedland & Little, 1984).

The data suggest that the enlistment propensity rate has declined since 1996. This may be attributable in part to the fact that youth in general, but particularly minority youth, lack accurate information about the military and their perceptions of a soldier's job influence their attitudes and propensity (Jones & Stigler, 1995).

Youth Influencers

A number of investigations have been conducted in all military services to examine the influence that economic factors and incentives have on youth propensity to enlist. For example, the unemployment rate, national advertising expenditures, and the ratio of number of recruiters to number of qualified military available affect enlistment rates (Barnes, et al., 1991; Borman, Rosse, & Toquam, 1982; Brown, 1984; Daula & Smith, 1986; Goldberg, & Greenston, 1986; Horne, 1984; Murray & McDonald, 1999). The military compensation rate and structure, educational benefits, and enlistment bonuses also play important roles in recruiting and retention (Dale & Gilroy, 1985a; Dale & Gilroy, 1985b; Fernandez, 1983; McManus, 1994; Morey, 1982; Palomba, 1983; Schmitz, 1990). The pay gap between military and civilian personnel varies depending on the index used, but the discrepancy is more acute for officers (i.e., college educated) than for enlisted personnel. Increases in basic pay would positively impact recruitment rates and could reduce attrition rates (MacDonald, 1998). Similar problems and issues were identified in the Republic of Korea in the late 1980s (Kim, 1988).

Educational benefits, such as the Army College Fund, the GI Bill, and the Veterans' Educational Assistance Program, have been found to increase the enlistment rates of high quality youth and are a more cost-effective mechanism than enlistment bonuses (McManus, 1994). Bonuses, by contrast, appear to be most useful to recruit targeted specialties. Regardless of which policy options are used, the Army requires extra benefits (kickers) to compete with the other military services (Fernandez, 1983). The U. S. Marine Corp enlistment bonus positively influenced recruiting; however, adding recruiters or advertising may be more cost-effective in achieving the desired results (Palomba, 1983).

Propensity

Youths' reported intentions to enlist in the military (i.e., propensity), obtained from the annual Youth Attitude Tracking Survey (YATS) and other surveys, are a reasonably good predictor of their future enlistment behavior. The research studies reviewed from the Army and combined

U.S. services focused largely on examining the characteristics of those youth that indicate a positive propensity and tracking trends in propensity levels. In general, the research showed that propensity is negatively related to age and education levels, and is higher among Blacks, Hispanics, and males than Whites and females (Bachman, Segal, Freedman-Doan, & O'Malley, in press; Segal, Segal, Bachman, Freedman-Doan, & O'Malley, 1998; Wilson, Greenlees, Hagerty, & Hintze, 1998). Youth with a negative propensity are a particularly informative group to study because they make up 72% of the population and nearly 50% of enlistees (Orvis, Gahart, & Ludwig, 1992). That is, although propensity *generally* relates to later enlistment behavior, there are many "false negatives," with about half of all enlistments coming from the group that initially expressed negative propensity.

Although propensity to enlist was fairly stable from 1973 through 1988, there has been an overall decline in propensity since 1989 (Freedman-Doan & Bachman, 1999; Segal, Bachman, Freedman-Doan, & O'Malley, in press; Wilson, et al., 1998). The declining trend was particularly noticeable in 1992-1993 and again after 1994-1995. Demographic analyses suggest that the propensity to enlist has decreased most among Blacks and females. A number of factors were identified through in-depth interviews that may account for the previous decline and the current generally negative enlistment intentions. Both parents and youth believe that military advertising and recruiter information is inaccurate and unrealistic. Many families stress higher education and believe that military service is incompatible with the educational goals they have for their sons and daughters. Although some potential recruits appreciate the educational benefits available in the services, they believe the time commitments to the military are too long and many do not welcome the demands of military life (Lancaster & Lehnus, 1996). Finally, individual enlistment intentions appear to be dynamic rather than static, fluctuating with current, future, and external conditions (Wilson, Berkowitz, & Lehnus, 1996).

Enlistment Decision

Research on career and enlistment decision-making among potential recruits suggests that males and females have similar reasons for enlisting and not enlisting (Wilson, Greenlees, & Lehnus, 1999). Both groups report they would enlist to earn money for education, to obtain job training, or because they feel a sense of duty to their country. Males and females also report that they would *not* consider military careers because of their perceptions of the military lifestyle, because they have other career interests, and because the military may present a threat to their life. One difference between these groups is that women are more likely to cite family obligations as a reason not to enlist. On a positive note, conversations with military members, veterans, or recruiters can increase both male and female interest in military service. Also, a recent study suggested that categorizing potential recruits based on their career decision-making patterns and their parents' socioeconomic status may be useful for targeting recruiting strategies (Nieva, Berkowitz, & Hintz, 1996). For example, middle to upper-middle class youth who are generally college-bound may be more interested in ROTC or attending one of the military academies, whereas more financially constrained, goal-oriented youth may respond more positively to the educational or financial benefits available through military service.

New recruits also provide critical insights on the enlistment decision process and may help identify potential advertising strategies. Basic trainees from the Navy and Air Force, for example, reported similar influencing factors. Both groups received positive enlistment advice

from family members or friends serving in the two services and were strongly influenced by their respective recruiters. Similarly, new Navy and Air Force recruits enlisted to receive high-tech training and obtain experience for civilian jobs (HQ Air Force Recruiting Service Market Research Branch, 1999; Robert, 1993). New Navy recruits, however, also joined to travel and serve their country, whereas new Air Force recruits more often mentioned continuing education while on active duty and gaining independence.

Some Army researchers used the theory of reasoned action to identify other social, cognitive, and affective influences on enlistment behavior and to model the enlistment decision process (Legree, Gade, Martin, Fischl, Wilson, Nieva, McCloy, & Laurence, 2000; Zirk, McTeigue, Wilson, Adelman, & Pliske, 1987). One of the more interesting findings involved the impact that parental attitudes have on youth propensity and enlistment behavior. Specifically, youth perceptions of their parents' attitudes toward military service more strongly predicted enlistment *propensity*, while parental attitudes predicted enlistment *behavior*. These findings suggest that it may be useful to involve parents in the recruiting process. For example, advertising initiatives might seek to inform parents about military career opportunities in order to influence their attitudes toward service.

Delayed Entry Program (DEP)

The DEP is a recruiting mechanism used by all of the services that allows individuals to sign an enlistment contract and to delay reporting for active duty for up to 12 months. Research on the DEP from the Army and Navy focused predominantly on identifying those demographic and economic factors that influence attrition from the DEP and during the first years of service. The most robust findings across studies were for age, gender, and length of time in DEP. Specifically, DEP attrition was found to be higher for females than males, for older as opposed to younger recruits, and for individuals who spend more time in DEP as opposed to individuals who are in DEP briefly before they ship (Kearl & Nelson, 1990; Matos, 1994; Murray, 1985; Nakada, 1994; Ogren, 1999; Phillips & Schmitz, 1985). Data suggest that the most common reasons for attrition from the DEP include "apathy, personal problems, medical issues, and simply a refusal to enlist."

The research reviewed did not show a consistent trend regarding DEP attrition levels and recruit quality as indicated by AFQT category or high school graduate status; conflicting results were reported in different studies. One study reported, however, that higher quality enlistees (i.e., high school graduates and those scoring in the upper categories on the AFQT) who entered the service from the DEP were less likely than their lower quality counterparts to leave the military during boot camp or within the first two years of military service (Matos, 1994). Finally, local market conditions, such as the unemployment rate, were found to have a smaller, but significant impact on DEP attrition (Kearl & Nelson, 1990; Nakada, 1994; Nelson, 1988).

Conclusions

Recruiters in the U.S. Armed Forces, and some foreign recruiting commands face an increasingly hostile recruiting environment. Today's youth report lower enlistment propensity than generations past, and this trend is expected to continue. Additionally, military services are challenged with increasing competition for high quality youth from higher education, such as

two- and four-year colleges and vocational or technical schools. Moreover, the current U.S. economy offers higher salaries for civilian employees, especially those in the technology sector, as well as low unemployment rates. These factors have made it difficult for the armed services to attract sufficient numbers of high quality youth.

The military recruiting research reviewed in this report examines a variety of factors that influence bottom-line production. Much of the information contained in these investigations can be used to inform decisions about how to improve recruiting. For example, results from personnel selection research and recruiter surveys suggest that it is important to select only those individuals who possess the personality and motivation necessary to be successful as a recruiter. Second, research investigations indicate two-year colleges and technical schools represent a largely untapped market for recruiting high quality youth, and propose that expanded recruiting efforts in these markets may prove fruitful. Furthermore, the armed forces would be wise to establish a greater presence on the Internet, given its capabilities to reach large numbers of youth at a fraction of the cost of traditional advertising media. This will become progressively more crucial as Internet use among American youth continues to rise. Finally, recruiting efforts might be aided by policy changes that reduce the military-civilian pay ratio, provide for shorter enlistment contracts, and establish partnerships with colleges to create opportunities for youth to enlist in a service and enroll in college.

There are still many unanswered questions, however, which merit further research. For example, although it is widely agreed that only individuals expected to be successful should be selected for recruiting duty, few investigations have been conducted to identify the best predictors of recruiting performance to be used in such a selection system. Additionally, little research has explored the best ways to train and prepare new recruiters for recruiting duty. The unique nature of the recruiter job requirements within the services, coupled with the difficult environmental conditions, suggests that new recruiters will need a great deal of preparation before entering the field. Finally, few studies have been conducted to identify the best means to encourage recruiter production. It has been argued that the current method of setting recruiting goals may discourage them from exceeding their goal. Although some evidence suggests that team or station-based goals may be more effective at increasing overall production, further research is needed to identify effective methods of enhancing recruiter production.

In sum, the research reviewed provides some guidance for improving the effectiveness of the military recruitment effort. This report has attempted to summarize the research most relevant for addressing contemporary recruiting issues. We hope that the review provides a comprehensive yet concise picture of the research results generated by the U.S. Army, Navy, Marine Corps, Air Force, and foreign service recruiting research community.

References

- Borman, W.C., Horgen, K.E., & Penney, L.M. (1999). *Overview of ARI recruiting research* (ARI Research Note 2000-07). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.
- Penney, L. M., Horgen, K. E., & Borman, W. C. (2000). *An annotated bibliography of recruiting research conducted by the Army Research Institute for the Behavioral and Social Sciences* (Technical Report 1100). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.
- Penney, L. M., Sutton, M. J., & Borman, W. C. (2000). *An annotated bibliography of recruiting research conducted in the U.S. Navy, Marine Corps, and Air Force, and in Foreign Services* (Institute Report 358). Tampa, FL: Personnel Decisions Research Institute.

Personnel Selection & Assessment

Borman, W. C., Toquam, J. L., & Rosse, R. L. (1978). *Development and validation of an inventory battery to predict Navy and Marine Corps recruiter performance* (Institute Report 22). Minneapolis, MN: Personnel Decisions Research Institute. [AD A069 371]

Model Category: Personnel Selection & Assessment

Service: U.S. Navy, U.S. Marine Corps

- The authors collected self, peer, and supervisor ratings on 17 dimensions (from Borman et al., 1976) and personality, vocational interest, and biographical test data from 267 Navy and 118 Marine Corps recruiters.
- Pooled self-peer-supervisor ratings showed good interrater reliabilities (Mdn $r = .57$ for the Navy and $.48$ for the Marine Corps) and a consistent three-factor solution: Selling Skills, Human Relations Skills, and Organizing Skills. Personality, vocational interest, and biographical keys (together called the Special Assignment Battery-SAB) were developed as predictors for each of the three factor criteria. An Overall Performance criterion was also developed.
- Cross-validities for the combined keys against these four performance criteria were $.24$, $.22$, $.31$, and $.22$ in the Navy sample and $.22$, $.22$, $.38$, and $.27$ in the Marine Corps sample.
- A production criterion, derived by standardizing within-district the number of recruits signed up over a six-month production period, was highly correlated with both Selling Skills and Overall Performance ($.43$ and $.52$ respectively in the Navy; and $.45$ and $.59$ respectively in the Marine Corps). These results support the notion that selling (prospecting, selling & closing) is the heart of the recruiter job.

Borman, W. C., Rosse, R. L., & Toquam, J. L. (1978). *Investigating personality and vocational interest constructs and their relationships with Navy recruiter performance* (Institute Report 24). Minneapolis, MN: Personnel Decisions Research Institute.

Borman, W. C., Rosse, R. L., Toquam, J. L., & Abrahams, N. M. (1981). *Development and validation of a recruiter selection battery* (81-20). San Diego, CA: Navy Personnel Research and Development Center. [AD A104 681]

Model Category: Personnel Selection & Assessment; Evaluating and Enhancing Recruiter Performance

Service: U.S. Navy

- The validity of personality and vocational interest constructs in predicting Navy recruiter performance and productivity was examined. A previous concurrent validation study identified several personality and vocational interest constructs that showed reasonably high validities against peer and supervisor ratings of job performance. For the current study, additional items were written to tap each of these constructs, and the revised construct composites (old plus new items) were used in another concurrent validity study.
- The criteria used were pooled peer and supervisor ratings of performance on 17 dimensions. Factor analysis yielded three factors (Selling Skills, Human Relations Skills, & Organizing

Skills) and an Overall Performance measure ($N=194$ for criterion development and validation).

- Validities for the personality trait and vocational interest constructs (old and new items) ranged from .40 - .46. However, these validities may have capitalized on chance relationships with performance because old items were selected for the final keys based on their correlations with performance in this and the previous sample. Therefore, these validities may be considered upper bound estimates.
- Lower bounds were estimated by grouping the old items into composites and calculating the validity of each in the new sample. The composites yielded acceptable validities (.15 - .37).
- Of the personality traits, "making a good impression" and "enjoying being the center of attention" correlated highest with performance in Selling. "Spontaneity/impulsivity" and "ambition/hard working" correlated with Human Relations Skills; "unhappiness" and "lack of confidence" correlated negatively with Human Relations Skills. "Planful/organized" traits related to Organizing Skills and "leading and influencing others" related to Overall Performance.
- The strongest vocational interests correlates with performance were interests in extroverted, dominant, social, and leadership activities (for all but Organizing), interests in sports and competitive activities (for Human Relations only), and interests in law and political activities (for all but Human Relations).
- The final composite scales had significant validities against a "bottom line" production criterion, as well ($r = .13 - .26$).

Atwater, D. C., Abrahams, N. M., & Trent, T. T. (1986). *Validation of the Marine Corps Special Assignment Battery (SAB)*. San Diego, CA: Navy Research and Development Center. [AD A168 280]

Model Category: Personnel Selection & Assessment

Service: U.S. Marine Corps

- The authors conducted a concurrent and predictive validity study in the Marine Corps using the Special Assignment Battery (SAB). The SAB was developed using item level empirical keying tied to each of the four criteria employed in the Borman et al. (1981) research (i.e., Selling, Human Relations, Organizing Skills, and Overall Performance).
- The average number of recruits brought into the Marine Corps over a six-month period and supervisor ratings on a three-point scale were used as criteria in the concurrent study.
- Correlations between the four SAB keys (Selling, Human Relations, Organizing Skills, and Overall Performance), and gross production were .23, .15, .09, and .24, (all p 's $< .01$; $N=1,005$). Against ratings, the correlations were .19, .15, .13, and .20, again, all significant.
- In the predictive study, a refined production index criterion (net monthly production, subtracting out the number of recruits who left the Marine Corps early), yielded validities of .27, .17, .21, and .29 for the four personality/vocational interest keys. A composite of the four keys also predicted attrition from recruiting during that tour of duty. Recruiters who left or were dismissed from recruiting scored significantly lower on the predictor keys.

Borman, W. C., Rose, S. R., & Rosse, R. L. (1985). *Identifying persons likely to be successful at recruiting minorities for the Navy* (Institute Report 98). Minneapolis, MN: Personnel Decisions Research Institute.

Model Category: Personnel Selection & Assessment

Service: U.S. Navy

- The authors attempted to identify personality or vocational interest constructs that distinguished between recruiters that were successful at recruiting African Americans and Hispanics. Unfortunately, few significant differences were found.
- Successful recruiters of African Americans had somewhat higher personality scores on the Human Relations Skills key developed earlier by Borman et al. (1978, 1981); successful recruiters of Hispanics had higher personality scores related to the Overall Performance key ($p < .05$), developed in that previous research.

Brown, G. H., Wood, M. D., & Harris, J. D. (1975). *Army recruiters: Criterion development and preliminary validation of selection procedure* (FR-ED-75-8). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A077 993]

Model Category: Personnel Selection & Assessment

Service: U.S. Army

- Against a composite supervisory nomination performance criterion (five best, five worst in each District Recruiting Command), very low validities were found for personality and aptitude scores, as well as for biographical items ($N = 35$ for low criterion group & $N = 45$ for high criterion group).
- The multiple regression of 12 territorial variables onto total recruiter production was also examined. Three variables [average production per recruiter in the subjects' District Recruiting Command (DRC), proportion of all enlistees in the DRC who chose the Army, and suburban proportion of the zone] significantly predicted production scores.

Borman, W. C. (1979). *Development of an assessment program for selecting Army recruiters* (Technical Report 33). Minneapolis, MN: Personnel Decisions Research Institute.

Model Category: Personnel Selection & Assessment

Service: U.S. Army

- This study details the identification of personal characteristics related to recruiter performance to develop assessment exercises for recruiter selection. Sources for the characteristics included job analyses, recruiter performance ratings, and a literature review. Each characteristic was given an importance rating by 27 subject matter experts (SMEs).
- The final personal characteristics list consisted of Sociability, Personal Impact, Empathy, Behavioral Maturity, Organization, Work Orientation, Self-Control, Practical Judgment, Reading and Learning Ability, Energy Level, Persuasiveness, Resistance to Stress, Confidence, and Flexibility.

- The proposed assessment exercises were two Cold Calls, a Follow-Up Interview, a Speech about the Army, an In-Basket, an Interview with a Concerned Parent, and a Structured Personal Interview.

Borman, W. C., & Fischl, M. A. (1981). *Recruiter assessment center: Candidate materials and evaluator guidelines* (Research Product 81-10). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Model Category: Personnel Selection & Assessment
Service: U.S. Army

- This report contains the assessment materials and evaluation guidelines for the six exercises designed to assess a candidate's potential as an Army recruiter.

Borman, W. C. (1982). Validity of a behavioral assessment for predicting military recruiter performance. *Journal of Applied Psychology*, 67(1). See also Borman, W. C., & Fischl, M. A. (1980). *Evaluation of an Army recruiter assessment program* (Technical Report 57). Minneapolis, MN: Personnel Decisions Research Institute.

Model Category: Personnel Selection & Assessment
Service: U.S. Army

- The authors developed an assessment center to predict recruiter performance in training ($N = 57$ students in Army Recruiter School).
- Three criteria from two phases of training were used: a composite score of three objective tests measuring mastery of prospecting and selling in Phase 1, instructor ratings of performance on telephoning and interview techniques in Phase 2, and time to complete the training program.
- Results indicated that ratings on the six exercises (2 Cold Calls, Interviews, Interview with Concerned Parent, 5-minute Speech about the Army, and In-Basket) correlated with the Phase 1 criteria (r 's = .32 to .41, $p < .05$) and the weighted composite was significantly related to all three criteria (.48, .35, and -.33 respectively, and .53, .50, and -.49 corrected for attenuation).
- Ratings on the Structured Interview, SAB-Navy (Borman, Rosse, & Abrahams, 1980) and ratings of first impression, physical attractiveness, and likeability were not related to the training criteria.

Borman, W. C., Rosse, R. L., & Rose, S. R. (1982). *Predicting performance in recruiter training: Validity of assessment in the recruiter development center* (Technical Report 73). Minneapolis, MN: Personnel Decisions Research Institute.

Model Category: Personnel Selection & Assessment; Training/Development
Service: U.S. Army

- The Army Recruiter Assessment Program was developed to predict success in Army recruiting. This report describes research on the validity of the program in operation as part of the Recruiter Development Center (RDC; $N = 550$ students in the Recruiter Course, rated by 15 experienced recruiters).
- The authors found significant, but low validities (in the .20's) for ratings on four assessment exercises (In-Basket, Speech Exercise, and Two Cold-Call Interviews), against training

criteria [Army Recruiting Comprehensive Test (a job knowledge test), Phase 2 Telephone Rating, and Phase 2 Interview Rating].

- Training criteria ratings suffered from restriction of range and low convergent validity. Also, the results were possibly due to the particular application of the RDC, which was used for developmental purposes. Assessors were responsible for motivating assessees in the exercises by assisting poor performers and challenging high performers.
- Prior research (Borman, 1982) on the RDC showed higher validities (.50's) when the center was used for assessment only. This development focus was very effective in motivating assessees to succeed in the school, but probably reduced the standardization for the assessment ratings.

Weiss, H. M., Citera, M., & Finfer, L. (1989). *Evaluation of an Army recruiter selection program* (Research Report 1514). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A210 569]

Model Category: Personnel Selection & Assessment
Service: U.S. Army

- The Army Recruiter Selection Battery (RSB-X) was administered to 400 individuals in the Army Recruiting Course. The RSB-X elements and bio-data were correlated with production criteria collected one and two years later to determine the personal variables relevant for recruiter productivity.
- Six productivity indicators were used: Total Achievement (number of recruits signed in all categories), Total Production (number of recruits adjusted for mission), Total DEP Loss, Key Achievement, Key Production, and Key DEP Loss [Key criteria refer to the number of recruits in the four key categories of GMA (high school graduate male accessions), SMA (senior male accessions), GFA (high school graduate female accessions), SFA (senior female accessions)].
- Results suggested that the personality components had few significant correlations with productivity and few correlations were stable across years. The four factors reported by Borman, Russell, and Skilling (1986) (Selling, Organization, Human Relations, and Overall Performance) also showed nonsignificant correlations with the productivity criteria.
- Correlations were improved when awards received were used as a criterion. Total Awards received for 1986-87 was significantly correlated with Exhibition (.21), Dominance (.17), Achievement (.13), and Authoritarianism (.26), all p 's < .05.
- The bio-data results indicated that successful recruiters were less seasoned (younger, fewer years in service, lower pay grade at time of entry), had already received letters of commendation, attempted to lead by example rather than by driving people, had a spouse who did not work, liked to plan activities rather than behave spontaneously, enjoyed parental support when growing up, and did not volunteer for recruiting duty.
- Because environmental or regional factors may have attenuated the correlations found, the average monthly battalion achievement and average monthly key achievement were selected as control variables. These corrections were entered into regression equations along with the 12 personality scales to predict total and key achievement. The R^2 s for total achievement ranged from .06 to .07; only two partial correlations (out of 12) were significant. The R^2 s for key achievement ranged from .08 to .10; only three partial correlations were significant.

Benedict, M. E. (1989). *The soldier salesperson: Selection and basic recruiter training issues in the U.S. Army* (Research Report 1534). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A212 827]

Model Category: Personnel Selection & Assessment; Training/Development
Service: U.S. Army

- The author reviewed research and practice in Army recruiter selection and training, pointed out problems and deficiencies, and recommended improvements where appropriate. His findings are summarized below:
- Regarding recruiter selection, the Army did not use a selection test in the late 1980s for making recruiting assignments. Instead, the Department of the Army (DA) assignment process was used to fill the positions. Potential recruiters were also screened out based on questionable criteria. For example, although recruiters' performance has not been related to their performance in their previous MOS, soldiers who did not receive a favorable local Commander's evaluation were considered ineligible.
- The recruiter position was not highly esteemed or rewarded by the Army. In addition, serving as a recruiter on a temporary as opposed to a permanent basis (PMOS) often had a detrimental effect on a soldier's career. These factors contributed to the lack of volunteer recruiters.
- The author argued that research on recruiter selection measures, including the RSB-X, produced weak validities (about .20 or lower) against performance and production criteria. Borman's (1982) assessment center, which achieved high validities against training course criteria, was a noted exception. Given the high selection ratio, none of these devices would provide sufficient predictive utility to justify their use.
- The Army Recruiter Course (ARC) received positive evaluations and was highly regarded by both students and instructors. The author recommended increasing the realism of the telephone and interview simulations, however, and preparing the students to face the demands for mission accomplishment and the stress encountered when goals are not achieved.
- The TT&E program, intended to be on-the-job training, was noted as the weakest element of the curriculum because it was not integrated with the rest of the training and not uniformly implemented. The author also identified organizational problems that may affect recruiter training and productivity. These included: (1) inadequate policies for selecting recruiters through the DA process; (2) insufficient or poorly executed training and coaching for newly assigned field recruiters; (3) inexperienced recruiters assigned as Station Commanders; (4) supervisory personnel who are not familiar with or have not actually participated in the sales process for many years; (5) negative reinforcement strategies used to improve low productivity; and (6) lack of personal responsibility by Commanders for individual recruiter's failures.

Taylor, J. G., Lindsay, G. F., Manager, B. K., & Weitzman, R. A. (1995). *Development of a model to predict recruiter success (initial results)*. Monterey, CA: Naval Postgraduate School. [AD A300 195]

Model Category: Personnel Selection & Assessment

Service: U.S. Army

- This report describes a concurrent validation study of the Sales Comprehension Test (SCT) against a weighted effectiveness criterion. Effectiveness was measured by weighting the percent of mission achieved by the percent of GSA (Graduate or Senior Category I-III A) and VOL (all categories of personnel who qualify to enter the Army including GSA) to account for recruit quality.
- Results indicated that the SCT was unable to distinguish between successful and unsuccessful Army recruiters ($N = 276$).
- The SCT was able to distinguish, however, between recruiters and non-recruiters and between individuals who had prior sales experience and those who did not. Individuals with sales experience and recruiters had higher SCT scores than individuals without sales experience or who were not recruiters.
- A multiple-linear regression equation to predict recruiter effectiveness was also reported. The equation was developed on a sample of 71 and validated on 30. The predictors included the SCT and AFQT scores, Primary Military Occupational Status (PMOS - in this case, combat arms vs. non-combat arms), and gender and yielded a cross-validated R^2 of .11.

Buchs, T. A. (1994). *Validation and justification of the use of a sales-aptitude test for U.S. Army recruiter selection*. Unpublished master's thesis, Naval Postgraduate School, Monterey, CA. [AD A283 658]

Model Category: Personnel Selection & Assessment

Service: U.S. Army

- The procedures and results of this study are discussed in the Taylor et al. (1995) reference annotated previously. This study pertained to the validation of the SCT on a sample of Army recruiters.

Hissong, J. B., & Plotkin, H. M. (1998). *Successful Recruiter Profile Project*. The United States Army Recruiting Command. Contract No. TCN 97-010, Scientific Services Program.

Model Category: Personnel Selection & Assessment

Service: U.S. Army

- The authors used the Prevue Aptitude Assessment, which measures cognitive ability, interests, and personality variables, to predict recruiter success in a sample of 188 recruiters from five brigades.
- Recruiter success was measured by combining production (60% of final criterion score) and supervisor performance ratings on ten "success factors" (40% of final criterion score). The recruiters were ranked according to the criterion score and split into two groups of highly successful ($N = 86$) and unsuccessful recruiters ($N = 102$).

- Three Successful Recruiter Profiles were developed based on the successful recruiters' scores on each of the cognitive ability, interests, and personality dimensions.

General Accounting Office. (1998). *Military recruiting: DoD could improve its recruiter selection and incentive systems* (NSIAD-98-58). Washington, DC: Author.

Model Category: Personnel Selection & Assessment; Evaluating and Enhancing Recruiter Performance

Service: U.S. Armed Forces

- The GAO reviewed the military services' recruiting processes to identify areas that could be improved and to make recommendations.
- The recruiter selection and training processes currently employed do not always ensure that they have the communication and interpersonal skills needed to be successful.
- Only the Air Force evaluates communication skills as part of the screening process. They require that recruiting command officials interview all prospective recruiters. The USAF also uses a personality test for screening recruiters. The traits assessed, in order of importance, are assertiveness, empathy, self-regard, problem-solving ability, happiness and optimism, interpersonal relations, emotional self-awareness, and reality testing. USAF recruiters have the highest success rates.
- Only the Marine Corps recruiter training program addresses the retention of recruits by emphasizing communication and leadership. Marine Corps recruiters also interact with recruits and drill instructors in basic training.
- It was suggested that retention of recruits could be enhanced by encouraging recruits to improve their physical fitness levels before entering boot camp and by improving DEP programs (e.g. giving recruits basic training material, access to fitness centers).
- Most recruiters have little control over setting their monthly goals, do not meet their monthly goals, and are dissatisfied with the long hours and pressures to meet goals.
- The GAO recommends: (1) using experienced field recruiters to interview potential recruiters and using communication skills as a selection criterion; (2) using personality screening tests; (3) emphasizing the recruiter's role in addressing attrition in training by meeting with drill instructors, and meeting with separating recruits in exit interviews; (4) conducting physical fitness tests before recruits report to basic training and encouraging more fitness in DEP; (5) linking recruiter rewards to recruits' completion of basic training; and (6) encouraging the use of quarterly goals instead of current monthly goals.

Graf, R. G., & Bower, D. B. (1976). *The development of an interest inventory for the selection of Marine Corps recruiters*. San Diego, CA: Navy Personnel Research and Development Center.

Model Category: Personnel Selection & Assessment

Service: U.S. Marine Corps

- The authors used the Navy RIS (Recruiter Interest Scale) key to predict the performance of Marine Corps and Navy enlisted recruiters ($N = 91$ Marine Corps recruiters and 77 Navy recruiters). The criteria were supervisor ratings on a 3-point overall effectiveness scale.

- The point biserial correlation against above and below average performance was .30. A Marine Corps key was also developed (MCRIS) that contained 75 vocational interest items, 13 of which were also included in the Navy RIS. No cross-validation was possible.

Larriva, R. F. (1975). *U. S. Marine Corps recruiter performance prediction study*. Unpublished manuscript.

Model Category: Personnel Selection & Assessment

Service: U.S. Marine Corps

- The author developed an adjusted production index as an alternative to using gross production as a criterion in a concurrent validity study.
- A predictor battery, consisting of the 16PF, a lie scale, a strength of motivation to succeed scale, and biographical items, was administered to Marine Corps recruiters from a single district ($N = 470$) in an attempt to predict a number of non-prior service accessions criterion. The data were analyzed using a regression formula previously developed by the Navy to predict recruiter performance. Results indicated the Navy formula was not valid for predicting the accessions criterion.
- Several recruiter effectiveness criteria were correlated with the predictor formula index. The most predictable criterion was the number of accessions for urban and rural recruiters separately, corrected for geographical differences in relative effectiveness of recruiters.
- The validation sample was split into urban ($N = 308$) and rural ($N = 162$) groups and two separate regression equations were generated. The equations were successfully cross-validated on 66 urban and 32 rural recruiters, indicating the predictor inventory may be useful for screening recruiter candidates.

Massey, I. H., & Mullins, C. J. (1966). *Validation of the recruiter-salesman selection test*. Lackland Air Force Base, TX: Personnel Research Laboratory, Aerospace Medical Division, Air Force Systems Command.

Model Category: Personnel Selection & Assessment

Service: U.S. Air Force

- The authors validated an Air Force recruiter selection battery against an objective training criterion (graduated vs. eliminated from training; $N = 210$ recruiter students). Although the battery consisted of 8 scales, only 4 yielded significant point-biserial correlations. Three of the scales yielded a multiple correlation of .23 ($p < .01$): Recruiter Language (4 sub-tests that assess grammar, word usage, sentence structure, & comprehension), Community Information, and the FCSRI-A (Surgency, Cooperativeness, & Orderliness). The authors validated the scales on a second sample ($N = 485$), but the results were no better than those obtained on the first sample. The weights from the original sample were used to cross-validate the battery on a third sample ($N = 480$) against the pass/fail criterion yielding a point-biserial correlation of .21 ($p < .05$).
- The predictor battery was not successful in predicting field supervisor ratings one year after the recruiter was placed on duty. However, Recruiter School advisor ratings did correlate .19 ($p < .05$) with field supervisor ratings ($N = 859$). The researchers also attempted to use

Air Force Specialty Code, the service specialty in which a recruiter previously worked, against field supervisor ratings, but it was not found to be a useful predictor.

Wollack, L., & Kipnis, D. (1960). *Development of a device for selecting recruiters* (Task assignment PF-016-003-W2). Washington, DC: U.S. Naval Personnel Research Field Activity.

Model Category: Personnel Selection & Assessment

Service: U.S. Navy

- Using Commanding Officer nominations of most and least effective recruiters in a concurrent validation study, and supervisory ratings of job performance in a predictive study, the authors found that the Kuder Persuasive Interests scale correlated .24 ($p < .01$) and the Kuder Scientific Interests scale correlated -.17 ($p < .01$) with performance ($N = 410$ active recruiters from 40 recruiting stations).
- A career motivation scale measuring attitudes toward Navy life also correlated significantly with performance ($r = .13$, $p < .05$).
- However, relationships were disappointing overall. Several cognitive ability tests failed to relate to performance, including fluency of expression, general cognitive ability, and arithmetic reasoning.

Brogden, H. E., & Taylor, E. K. (1949). *The validity of recruiter selection instruments at various points of cut* (Report No. 781). Washington, DC: Personnel Research Section: U.S. Army Adjutant General's Office.

Model Category: Personnel Selection & Assessment

Service: U.S. Army

- The authors used measures of vocational interests, and three measures tapping interests, hobbies, and background to create a battery to predict Army recruiter effectiveness.
- The four empirically-keyed scales were cross-validated using a sample of 475 recruiters and yielded a validity coefficient of .18 against a production criterion (average number of recruits brought into the Army by each recruiter per hour on recruiting duty).
- The authors reanalyzed the data using a turnover criterion that yielded a biserial validity coefficient of .36.
- The production criterion was criticized for having low reliability and possibly being contaminated with factors unrelated to recruiter effectiveness. Although the turnover criterion may also have been contaminated, it resulted in higher validity. However, it is possible that the predictors simply may have been better predictors of turnover than recruiter production.

Training and Development

Hull, G. L., & Benedict, M. E. (1988). *The evaluability assessment of the recruiter training program* (Research Report 1479). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A197 782]

Model Category: Training/Development

Service: U.S. Army

- This report outlines a plan to evaluate the Army Recruiter Training Program.
- The elements to be evaluated were (1) the recruiter candidates, (2) course content, (3) instructional strategies, (4) media and materials, (5) instructors, and (6) instructional environment. The authors also proposed examining two outcome variables: recruiter achievement and attitude.
- Methods to be employed included: observation, interviews with instructors and students, surveys, an audit of materials, comparison of official policies with actual practices regarding the selection of students and instructors and implementation of the training program, and compilation of demographic information on students and instructors.

Hull, G. L., Kleinman, K., Allen, G., & Benedict, M. E. (1988). *Evaluation of the US Army Recruiting Command Recruiter Training Program* (Research Report 1503). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A206 844]

Model Category: Training/Development

Service: U.S. Army

- The evaluation proposed by Hull and Benedict (1988) was implemented and the results were outlined in this report.
- Data were collected from three groups: a sample of students who recently completed the course ($N = 152$), a sample of past students ($N = 148$), and 32 current instructors from the Recruiting and Retention School (RRS).
- In general, students and instructors rated the course favorably in terms of how well the course prepared them for recruiting duty and the effectiveness of lecture and small group instructional strategies.
- Results also indicated that instructors delivered the material effectively and were highly regarded by students. However, both students and instructors expressed a need for increased emphasis on salesmanship skills, coping with the pressure to make mission, rejection, and problems with friends and relatives that arise from the recruiter's role.
- An interesting finding was that students who performed better on the training tests tended to rate the course less favorably overall than did students who performed poorly on the training tests. However, this finding was reversed for the Recruiter Exercises, a simulation of work in a recruiting station, which the better performing students rated more favorably than poor performing students.

Chonko, L. B., Madden, C. S., Tanner, J. F., & Davis, R. (1991). *Analysis of Army recruiter selling techniques* (Research Report 1589). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A240 841]

Model Category: Training/Development
Service: U.S. Army

- The purpose of this research was to identify and determine the effectiveness of selling techniques taught by the Army recruiter school and the actual practices of recruiters in the field to make recommendations to improve recruiter effectiveness.
- The authors provided a review of several theories of selling and buyer behavior to compare and contrast with the approach taught at the Army recruiter school.
- The researchers visited 14 Army recruiting stations chosen to be representative of the demographic and geographic conditions nationally. They observed selling techniques and procedures and conducted interviews with the station commanders, recruiters, and sometimes with prospects.
- The basic sales model taught by USAREC is modeled after the needs-satisfaction approach to sales and includes: establishing rapport and credibility; determining goals, needs, and interests; determining qualifications; presenting features and benefits, and closing and handling objections.
- USAREC information suggested that recruiters need to understand market segmentation (roughly whether the prospect is looking for long-term vs. short-term career with the Army) and engage in community involvement (make friends, join community activities such as church and youth organizations, and talk about the Army to everyone) in order to develop sources of prospecting leads.
- The researchers commented that the USAREC recruiting process has some problems. The model was based on the belief that the best way to acquire prospects is to contact as many people as possible to find those willing to 'buy'. Under difficult recruiting conditions, this belief leads to increased micromanagement and pressure for more calls and paperwork to get results. Inherent in this model is a 99% rejection rate that recruiters say is difficult to handle and should be addressed in training. Also, USAREC's requirements do not allow time for involvement with and establishing relationships in the community although these activities were considered important. The model views community leaders as sources of prospects and encourages recruiters to partner with them. However, actual recruiter behavior is more akin to pressuring leaders for names.
- The authors suggested that these problems, in combination with the fact that most recruiters did not volunteer for recruiting, result in dissatisfaction and counterproductive activities, such as wasting time and materials and speaking negatively about the Army, which negatively impacts recruiting.
- The authors noted that the process by which recruiters become involved in a community is long-term and requires building rapport, partnering, listening, and community management skills.
- One manner in which successful recruiters deviate from established policy is by terminating prospects more quickly, or classifying prospects in ways that allow them to spend more time with the more promising prospects.

- The authors recommended developing a system to classify prospects (possibly by the amount of time needed to close out the prospect) so that recruiters could utilize their time more effectively.
- Regarding the ARC, the consensus among recruiters and Station Commanders was that the course was useful, but new recruiters were more likely to adhere to the USAREC sales model than were experienced recruiters. Suggestions for training included how to deal with rejection, stress management, administrative skills, and relationship building and networking.

Hull, G. L., & Nelson, W. A. (1991). *Instructional needs analysis of the US Army Recruiting Command (USAREC) on-the-job recruiter training program* (Technical Report 1590). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A237 800]

Model Category: Training/Development
Service: U.S. Army

- On-the-job training (OJT) practices were examined in order to identify areas in need of improvement. Interviews were conducted with Station Commanders and recruiting company personnel from 15 Battalions ($N = 243$).
- The authors reported that, in general, OJT was neither standardized nor consistently applied across Battalions. Recruiters and their Station Commanders perceived that commitment to training was low, recruiters lacked close supervision, did not receive enough individualized feedback, and received too much negative feedback/pressure, especially regarding missions. They would like to see more training on sales and prospecting.
- Although personnel were generally positive about the ARC, they did not feel that it provided them with enough "real world" experience and were not prepared when the techniques they learned in class failed them on the job.
- Remedial training for 'zero-rollers' (recruiters with zero accessions for multiple months) and the Recruiter Assistance Program (RAP) were perceived as punishment.
- The authors recommendations included revising training with a focus on the Transitional Training and Evaluation Program (OJT), revising recruiter selection and criteria, instituting a formal orientation process, developing a paired-training or mentoring program, emphasizing training in the Station Commander Course, and providing Station Commanders with training materials.

Love, K. G., Jex, S. M., Richard, R. L., & McMullin, C. (1991). *Organizational assessment to support the USAREC On-the-Job (OJT) Recruiter Training Program* (ARI Research Note 91-89). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A237 800]

Model Category: Training/Development
Service: U.S. Army

- An organizational assessment of USAREC was performed in order to identify factors that affect training implementation and transfer of training for Army recruiters.

- Assessed via structured interviews of 50 Army recruiting personnel from the Brigade, Battalion, and Company level were the appropriateness of functional groupings (perceptions of various levels of USAREC), motivation and control systems (how members are motivated and controlled), impact of programs (e.g., training), and quality of life.
- Based on responses from the interview, a survey was developed and sent to a random sample of 765 NCO's at all levels of USAREC, except for HQ. The survey also included scales to measure job satisfaction, job frustration, and organizational commitment. The response rate was 52% ($N=398$). Fifty-four percent (54%) of this sample identified themselves as being volunteered members of USAREC.
- The authors reached several conclusions based on responses to the interviews and surveys. First, the organizational structure of USAREC does not support its mission well (e.g., all levels can make policy which results in information not being received in a timely fashion, too much information being passed down, and the receipt of conflicting information from different levels). These problems make it difficult for recruiters to do their job (e.g., too much paperwork, micromanagement).
- Second, the process by which missions are determined is problematic. Mission adjudication is perceived to be more like "mission assignment". The market analysis data missions were based on were questioned as being out-of-date. Missions were not perceived to be set equitably (e.g., often neglect factors that are beyond the control of recruiters; successful recruiters are better able to negotiate lower missions, whereas unsuccessful recruiters often have their missions raised).
- Third, far too much harassment and intimidation occurs under the guise of "motivation" or "training", especially zero-roller training. The authors speculate this is due to USAREC's extreme focus on mission accomplishment at the expense of individuals.
- Fourth, although the OJT programs are good, they are not effectively administered or given priority. Mission accomplishment and other administrative functions leave little time for OJT training. The TT&E Program was not implemented adequately because of mission requirements and inexperienced or poorly trained Station Commanders.
- Finally, there was much division, especially between Headquarters and the rest of command. Headquarters was perceived as being out-of-touch, nonsupportive and staffed by individuals who have never been recruiters.
- Recommendations include: (1) eliminating the Brigade level from the organizational hierarchy; (2) limiting officer involvement to Battalion and above (to eliminate micromanagement); (3) rotating personnel in USAREC (to keep NCO's in touch with recruiting life and to act as resources for new recruiters); (4) implementing Station-based missioning (it was successful in the past, would eliminate pressure on individual recruiters, and result in greater teamwork, job satisfaction, organizational commitment, and less frustration); (5) increasing lateral communication (should increase information exchange, and reduce perceptions of isolation and lack of support); and (6) focus on training skills of Station Commanders.

Pond, S. B., Powell, T. E., Norton, J. J., & Thayer, P. W. (1992). *Feasibility of using realistic job previews in the Army recruiter training process* (Technical Report 1630). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A257 914]

Model Category: Training/Development
Service: U.S. Army

- Because the recruiter job has many negative characteristics (high stress, high pressure, unrewarding) and the job perceptions developed in training are unrealistic, the use of realistic job previews (RJPs) to aid in retaining Army recruiters and possibly to improve their performance was explored.
- The authors felt that RJPs would be useful as a 'bridge' between the ARC and TT&E to give recruiters a better idea of what to expect in the field and to help them deal with stress and other issues. Administering RJPs to the recruiter's spouse and Station Commanders (as a reminder of what it's like to start out) may also help recruiters adjust more quickly to their new position.
- The authors suggested that RJPs could be most helpful early in the recruiter's job by clarifying performance issues, and making the transition into the job smoother. This should, in turn, reduce ambiguity and stress on the job, and perhaps aid in recruiter persistence on the job in the face of failure.
- However, the authors state that the Army would need to eliminate some of the negative job features of recruiting and specify the desired RJP outcomes in order for it to be effective.
- Suggestions for the development, implementation and evaluation of RJPs are discussed.

Recruiting Management & Organization

Recruiter Surveys

Zucker, A. B., & George, B. J. (1999, November). *Recruiter quality of life: Results from the 1998 DoD Recruiter Survey*. Paper presented at the 41st Annual Conference of the International Military Testing Association, Monterey, CA.

Model Category: Recruiting Management & Organization

Service: U.S. Armed Forces

- This paper briefly described results of the 1998 DoD Recruiter Survey developed and administered by the Defense Manpower Data Center (DMDC). The survey tracks five aspects of recruiter quality of life: goal achievements, job demands, management/supervisory support, job satisfaction, and improprieties on the part of recruiters. Results of the 1998 survey ($N = 2,766$) were compared to previous surveys administered in 1989, 1991, 1994, and 1996.
- Overall, 26.7% of recruiters believed they could not achieve their mission. This percentage was higher for the Army (37%) than for the Navy (16.6%), Marines (13.9%) or Air Force (26%). On the whole, 33.1% of recruiters met their missions in nine or more months of the year. Again, the results were worse for the Army (16.9%) than for the Navy (50.6%), Marines (44.9%) or Air Force (50.2%). Additionally, the number of recruiters who made their mission in nine or more months of the year had decreased steadily in all services since 1991.
- Sixty-five percent of DoD recruiters reported working in excess of 60 hours a week. For each service, the percent of recruiters that reported working more than 60 hours a week ranged from 42.1% (Air Force) to 79.7% (Marines). Overall, 68.7% of recruiters voluntarily chose to forego annual leave due to job demands. This percentage was highest in the Marines (74.8%) and lowest in the Army (65%).
- Twenty-four percent of recruiters responded that they did not receive good support from their supervisors. Army recruiters reported the least support (29.6%), while 16.2% of Marine recruiters reported poor support.
- Forty-five percent of recruiters were dissatisfied or strongly dissatisfied with their job. Army recruiters showed the highest dissatisfaction rates (52.2%); only 24.6% of Army recruiters would remain in recruiting if given a choice. Air Force recruiters were the least dissatisfied (36.7%); 41.7% would remain in recruiting if given a choice.
- And finally, the percent of recruiters that perceived frequent improprieties (i.e., bending the rules to meet the mission) had increased steadily from 1991 for all services (28.1% in 1998 compared to 11.4% in 1991). This number was highest for the Army (32.3%) and lowest for the Air Force (23.6%).

Condon, K. M., Dunlap, B. D., Girard, C., Sundel, M., & Feuerberg, G. (1997). *The 1996 DoD Recruiter Survey: Profiles and trends*. Arlington, VA: Defense Manpower Data Center. [AD A335 671]

Model Category: Recruiting Management & Organization; Evaluating and Enhancing Recruiter Performance; Training/Development
Service: U.S. Armed Forces

- This work summarized and analyzed data from the 1996 DoD survey of military recruiters from all active duty services (i.e., Army, Navy, Marine Corps, Air Force and Coast Guard) plus reserve and guard components (i.e., Army Reserve and National Guard, Navy and Air Force Reserve, and Air National Guard). Respondents who had at least one year of active recruiting duty and monthly production goals were eligible for inclusion. Responses were compared with data from similar surveys conducted in 1989, 1991, and 1994.
- Descriptive and trend analyses ($N = 4,008$) suggested that recruiting has become an increasingly difficult job. The Army and Coast Guard recruiters respectively reported the least positive and most positive survey responses as a whole. Although 41.9% of all recruiters achieved goal in 9 of the prior 12 months, only 28.9% of Army recruiters performed at this level. Moreover, even experienced recruiters were less likely than in the past to believe their monthly goals are achievable.
- A relatively high, although declining, percentage of respondents reported being satisfied with military life (86.8%). An increasingly large majority of recruiters (53.7%) however, reported that they are dissatisfied with the recruiting job. Their dissatisfaction may in part result from the fact that a large number of recruiters indicated they did not get a realistic job preview (61.2%) and that their families were not prepared by the service for their job demands (73.8%).
- Regarding recruiters' perceptions of their job demands, respondents indicated they were working longer recruiting hours (63.4% indicated more than 60 hours/week) and believed these longer hours were necessary to achieve their goals. Interestingly, the Marine Corps respondents reported working the most hours and the Coast Guard the least. Supporting these beliefs, greater numbers of recruiters had either voluntarily sacrificed (68.2%), or had been denied (22.1%), their requested annual leave in the prior 12 months.
- A majority of recruiters agreed with the statements that success in recruiting could make or break their careers (75.6%), they are pressured to continue recruiting after achieving their goals (82.0%), and they are punished if they fail to reach their goals (59.0%).
- Regarding recruiters' perceptions of leadership support, only about one-fourth of the respondents agreed their leaders keep them informed of quality of life initiatives. Similarly, less than half agreed with the statements that they receive good supervisory support (44.8%), feel they work with their supervisors as a team (41.4%) and their supervisors understand and help them with their problems (36%).
- On a more positive note, recruiters as a whole seemed to believe they received good professional training that was relevant, helpful, and sufficient for effective recruiting.
- In addition to the descriptive analyses, multiple regression analyses were performed on six criterion variables using survey items as predictors including: policy issues (e.g., supervisor cooperation, training, hours performing job, etc.), demographics, service branch components, and other relevant variables ($N = 4,029$). Where appropriate, items were logically combined to form scales (e.g., goal pressures, goal achievement, etc).

- Differences between branches of the service were considerable for all six criteria; especially large were differences in the number of hours worked per week (e.g., 67.1% of Army, while only 33.1% of the Air Force recruiters reported working more than 60 hours per week), satisfaction with military recruiting (e.g., only 21.8% of Army but 70% of Coast Guard recruiters are satisfied), and the degree to which goals are achievable (e.g., 62.9% of Navy recruiters vs. 34.9% of Army recruiters agree their goals are achievable).
- Satisfaction with leadership, the extent to which goals are achievable, goal achievement, and fewer hours on the job were the most powerful predictors of satisfaction with the recruiting job. The cooperation of superiors (scale) had the greatest influence on leadership satisfaction, goal pressures, and the degree to which goals are achievable. That is, the more recruiters perceive cooperation from their superior, the more likely they are to be satisfied with their superiors' leadership, to believe their goals are achievable, and to feel relatively low goal pressures. In addition, the greater their perceptions of goal pressure and the belief that goals are not achievable, the more hours recruiters reported working per week.
- The authors suggested that supervisory cooperation and a reduction in goals and hours could increase job satisfaction among recruiters. Realistic goals, good training, freedom to plan, and reduced goal pressure could also positively impact goal perceptions and achievement.

Condon, K. M., & Girard, C. (1998). *Analysis of the 1996 DoD Recruiter Survey comments* (97-020). Arlington, VA: Defense Manpower Data Center. [AD A344 699]

Model Category: Recruiting Management & Organization

Service: U.S. Armed Forces

- Responses to three open-ended questions on the 1996 DoD Recruiter Survey were content analyzed to identify areas of recruiting duty and quality of life that needed improvement.
- The questions asked recruiters for their comments regarding the most pressing problems currently facing recruiters, what DoD and their Service could do to help recruiting efforts, and for general comments.
- Half of all active duty recruiters were surveyed, but not all responded to each open-ended question. The authors content analyzed sufficient responses to obtain a 25% random sample for each of the 10 service branches (separate 25% random samples were drawn from each of the 10 subgroups for each question).
- No significant differences were found on responses to the structured questions between recruiters who responded to the open-ended questions and those who did not.
- Responses to the three questions could be grouped into nine problem categories: (1) the strain of recruiting duty on family/personal life; (2) unrealistic recruiting goals; (3) poor leadership/lack of support from supervisors and recruiting command; (4) the "make or break" effect of recruiting performance on a military career; (5) the need to revise enlistment standards (e.g., reduce medical standards, allow non-graduates with AFQT 50 or higher); (6) the fact that civilians don't appreciate the role/need of military; (7) the need for more advertising/promotional materials; (8) the need for increased enlistment attractiveness (e.g., cash bonuses, educational benefits; and (9) the need for a better way to select recruiters to eliminate those unsuitable for the job.

Baker, H. G., Somer, E. P., & Murphy, D. J. (1989). *Navy Recruiter Survey: Management overview* (TR 89-16). San Diego, CA: Navy Personnel Research and Development Center. [AD A211 732]

Model Category: Recruiting Management & Organization

Service: U.S. Navy

- The Navy Personnel Research and Development Center conducted a survey of recruiters in response to concerns about recruiter quality of life. This report provided an overview of the results from fixed response questions. Responses to an open-ended question were reported in Aunins, Sander, Giannetto, and Wilson (1990).
- Survey items were developed based on interviews with 150 recruiters, Zone Supervisors, and Officers from different levels of the Navy Recruiting Command. The survey was distributed to all Navy recruiters in the U.S. during February 1989 and the response rate was very high (94.8%, $N = 3,315$).
- Ninety-seven percent of respondents were male, 80% had between 4 and 16 years of service, 40% were in their first year of recruiting duty and 64% intended to remain in the Navy until they retired.
- In general, recruiter selection was perceived as a problem; over 60% questioned whether individuals selected for recruiting duty possessed the proper personality and motivation to be successful.
- A majority of recruiters perceived that the Navy's recruiter training course offered inadequate sales training and insufficient preparation for real world recruiting, its pressures, and how to handle failures. Ninety percent indicated that stress management training was needed in the training course and in the field.
- More than 75% of recruiters reported high levels of teamwork in their Recruiting Station and two thirds reported making their goal in the month prior to the survey. However, the majority of recruiters also reported experiencing a great deal of pressure to make goal, including the use of fear and intimidation by Chief Recruiters and Zone Supervisors.
- Recruiter incentive systems were criticized for being unfair, inflexible to changing market conditions, and for emphasizing quantity over quality.
- Approximately 90% of recruiters felt positive about their job and about helping individuals begin a Navy career; 60% felt they learned valuable skills. The majority however, perceived recruiting duty as detrimental to their chances for career advancement. For example, 70% indicated that recruiting pressures prevent them from studying for advancement exams.
- Eighty percent of recruiters reported experiencing much stress and 79% felt that recruiting duty is more stressful than other Navy jobs. Long hours were also common, as 85% indicated they work 60 hours or more per week.
- Finally, recruiters believed that the Navy has a positive image among potential recruits and offers competitive incentives. Recruiters favor more aggressive advertising by the Navy however, because prospects often have less knowledge about the Navy than they do of other services. Recruiters also indicated the need for additional recruiting advertising devices (RADs) and promotional items to help them do their job.

Aunins, A. E., Sander, K. E., Giannetto, P. W., & Wilson, S. J. (1990). *Navy Recruiter Survey: Content analysis of free response data* (TR 90-14). San Diego, CA: Navy Personnel Research and Development Center. [AD A240 450]

Model Category: Recruiting Management & Organization
Service: U.S. Navy

- The Navy Recruiter Survey described by Baker, Sommer, and Murphy (1989) contained an open-response question in addition to the fixed-response questions. This question asked recruiters to give "written comments about anything related to recruiting duty and (their) quality of life." Sixty percent ($N=1,996$) of recruiters wrote a response to this question. Their responses were content analyzed and the results were discussed in this report.
- Overall, responses to the open-ended question echoed the findings reported in Baker et al. (1989). Although recruiters reported enjoying the challenge of recruiting itself and perceived themselves as dedicated and hardworking, they were dissatisfied with recruiter selection, training, goaling procedures, incentive plans, long working hours, station assignments, and the use of threats and punishment by supervisors.
- Some recruiters suggested the need for administrative support to assist with the abundance of paperwork. Concerns about the need for comprehensive medical coverage, improved housing allowance, and out-of-pocket compensation policies were also raised.

Baker, H. G. (1990). *Navy Recruiting Comprehensive Stress Management Program I. The stress of recruiting duty* (TN-90-31). San Diego, CA: Navy Personnel Research and Development Center. [AD A225 429]

Model Category: Recruiting Management & Organization
Service: U.S. Navy

- The prevalence of stress among Navy recruiters was assessed as part of the development of a comprehensive stress management program by Navy Recruiting Command.
- Data were collected from the following sources: (1) an informal survey of approximately 200 mental health practitioners by Navy Medical Command (MEDCOM); (2) a summary report by the Naval Inspector General; (3) the No-Fault Transfer Log from Navy Recruiting Command (No-Fault transfers allow recruiters to transfer out of recruiting if, through no fault of their own, they are not successful.); (4) informal interviews with Navy recruiters and recruiting managers; and (5) a formal survey of all Navy recruiters.
- The MEDCOM survey indicated that 58% of the mental health practitioners surveyed reported having seen a Navy or Marine Corps recruiter for stress or other psychological problems. The most common diagnoses made for recruiters were marital dysfunction (34%) and stress/depression (32%). Spouse abuse (18.8%) and alcohol or drug abuse (16%) were also problems.
- Across sources, there was much agreement that the Navy recruiter job is very stressful, more so than almost all other Navy jobs. Specific problem areas identified included selection systems that do not screen out individuals ill-suited for the job, long hours, marital/family problems, management and incentive systems that increase pressure but offer little support, and the lack of stress management training.

- Specific findings from the recruiter survey ($N = 3,315$, a response rate of 95%) revealed that 85% of recruiters worked 60 hours or more per week and 35% had five or less days off in the prior year. Also, 89% felt their job was more stressful than other Navy jobs, 81% indicated they feel much stress in their job, and 62% agreed with the statement, "Job stress is a problem for me." Ten recruiters mentioned thoughts of suicide in response to an open-ended question.
- The author concluded that job stress is a serious problem among Navy recruiters and recommended that recruiter input be included in the development of a comprehensive stress management program.

Hirabayashi, D. M., & Hersh, R. (1985). *Excellence in Navy recruiting: A look at high-performing Navy Recruiting Districts*. Unpublished master's thesis, Naval Postgraduate School, Monterey, CA. [AD A168 546]

Model Category: Recruiting Management & Organization
Service: U.S. Navy

- This report described a qualitative study to identify the attributes of highly productive recruiting districts. The authors interviewed individuals with several years of experience in recruiting, such as Recruiting Area Commanders, and identified two top recruiting districts. They conducted interviews with 17 recruiting officers and 50 enlisted personnel in those two districts.
- The bulk of the report consisted of an exhaustive listing of the responses given by interview participants to questions such as "How do you define excellence in Navy recruiting?," "How does a Navy Recruiting District achieve excellence?," "Why do you think your district was chosen as an excellent district?," "What do people at your district do on a daily basis that causes your district to be excellent?," and "What is the most important attributed contributing to the excellence of your district?"
- Based on the responses, the authors defined excellence in Navy recruiting as "Making goal, both quantity and quality, consistently and with integrity."
- The authors then identified seven "Measures of Excellence" that describe the attributes of high performing recruiting districts: (1) High Quality Leadership; (2) Systems in Place (simple, effective support systems); (3) Taking Care of People (recruiters and potential recruits); (4) Excellent Communication; (5) Teamwork; (6) Command Climate (pride in the Navy and in recruiting, professionalism); and (7) Making Goal with Integrity.
- Finally, the authors asked individuals from the top two performing districts how they would design an excellent recruiting district. Some of the topics raised included: (1) the need to address turnover among recruiting personnel; (2) the need for a better system to screen out individuals with a low probability of success in recruiting duty; (3) quality of life issues for recruiters (e.g., housing, training, stress, management); (4) paperwork reduction; and (5) the need for easily accessible and modern facilities to present an effective and efficient organization for prospects and their parents.

Borman, W. C., Toquam, J. L., & Rose, S. R. (1982). *Evaluation of three programs to assist Navy recruiters* (Institute Report 75). Minneapolis, MN: Personnel Decisions Research Institute.

Model Category: Recruiting Management & Organization

Service: U.S. Navy

- A survey was administered to Navy Recruiting Command district zone supervisors and program coordinators ($N = 181$) to assess the strengths and weaknesses of three recruiting programs. Cost-benefit analyses were also conducted.
- The three programs used enlisted personnel to assist in recruiting activities: (1) The Recruiter Assistance Program (RAP) assigned recent basic training and 'A' school graduates to aid individual stations' recruiting efforts; (2) the Hometown Area Recruiting Program (HARP) used fleet personnel on temporary recruiting duty; and (3) the Senior Minority Assistance to Recruiting program assigned officer and enlisted minorities from the fleet to recruit in minority communities.
- Problems common to all three programs included: (1) participants assigned to the programs did not always understand what was expected of them; (2) recent recruits whom recruiters specifically requested for RAP duty were sent to their fleet assignments rather than to RAP; (3) incentives for participant productivity were lacking; and (4) participants often lacked transportation to assist in the recruiting effort.

Foreign Services

Bennett, C. (1999). Outside in inside out society meets military: Who gives way? In S. R. Truscott (Chair), *Strategic Approaches to Recruiting*. Symposium conducted at the 41st Annual Conference of the International Military Testing Association, Monterey, CA.

Model Category: Recruiting Management & Organization

Service: New Zealand Defence Force

- Current and future recruiting challenges in the New Zealand Defence Force (NZDF) were discussed, along with strategies to meet those challenges.
- Similar to other Western countries, the NZDF faces the need for more technically skilled personnel and has experienced problems with attrition and low morale. Coupled with a civilian youth population that is shrinking in size, increasingly diverse, less mentally qualified, and with a relatively low propensity to enlist, these issues predict future problems recruiting sufficient personnel to sustain the military force.
- To address these concerns, the NZDF has begun to offer educational incentives, reduced the length of engagements, adopted more flexible leave and work practices, increased compensation, and developed a new system to select, train, develop, and manage military personnel.
- The NZDF has also begun monitoring the Force's environment to better anticipate changes and be proactive in meeting organizational and individual needs.

Johnston, I. (1999, November). Market testing of the military recruiting function. In S. R. Truscott (Chair), *Strategic Approaches to Recruiting*. Symposium conducted at the 41st Annual Conference of the International Military Testing Association, Monterey, CA.

Model Category: Recruiting Management & Organization
Service: Australian Defence Force

- In response to an Australian government request to increase operational and financial effectiveness, it was recommended that the Defence Force Recruiting Organization could improve its efficiency by out-sourcing several activities including testing and assessing candidates, selecting candidates (non-officers only), and administrative functions supporting the process of offering jobs and enlistment.
- This paper described the planning and organizational issues that arose while these recommendations were implemented. For example, progression of the project was hindered by the initial decision to limit the information supplied to organizations outside of the Defence Personnel Executive offices. Consequently, the Training Commands from the respective services were unable to supply crucial information in a timely manner. A military deployment that occurred during the decision-making and implementation phases complicated and delayed the project.
- There was significant debate around which contracted activities would require some military staffing to maintain credibility and quality control.
- Morale decreased within Defence organizations that were influenced by the changes, particularly among the civilian staffs whose jobs were threatened by the proposed changes. As a result, these organizations were reluctant to provide the staff necessary for the project.

Okros, A. C. (1999, November). *Attracting and retaining the best: An integrative analysis of future human resources issues and trends*. Paper presented at the 41st Annual Conference of the International Military Testing Association, Monterey, CA.

Model Category: Recruiting Management & Organization
Service: Canadian Forces

- The author discussed how several demographic and social changes would influence the human resource (HR) function in the Canadian Forces (CF) in the coming century.
- Some of the issues reviewed were: (1) the population decline; (2) immigration and diversity; (3) increases in the number of youth attending college; (4) changes in the Canadian value system; (5) the effect of globalization and immigration on Canadian national identity; (6) the shift to a knowledge economy; (7) changes in the labor force; and (8) expectations of the new work force.
- These issues were expected to influence the attraction, development, and retention of individuals, as well as leadership within the CF.
- In order to meet these new challenges, the author suggested that the CF HR function become more integrative, flexible, and responsive to the rapid changes in defense needs and the needs of its individual members (e.g., quality of life, fair treatment, and career development).

Matser, F. (1996, November). *The role of recruitment and selection in the transition from a regular and conscript army to an all-volunteer force*. Paper presented at the 38th Annual Conference of the International Military Testing Association, San Antonio, TX.

Model Category: Recruiting Management & Organization
Service: Royal Netherlands Army

- The author briefly described why and how the Royal Netherlands Army (RNLA) transitioned from conscription to an all-volunteer force in 1996. The decision to transition away from conscription was made in 1992 because a 1987 law made it very difficult to assign conscripts abroad.
- The social environment of the Netherlands was not favorable for recruiting. The country had little military tradition, youth were largely uninterested in being soldiers, and the public image of serving in the army was less than positive as a result of the conscription system.
- To address these issues, the RNLA sought to improve the army's image through advertising and information campaigns, to professionalize the recruitment process using modern technology (e.g., interactive video, virtual reality), and to provide objective information on the realities of military life (e.g., life-threatening situations, physically demanding work, being away from home for months). Replacing old World War II-style uniforms that soldiers were embarrassed to wear with new, American-cut camouflage suits helped improve the public image.
- Although the RNLA preferred that service contracts be from four to six years in length, the contract duration was set at two and a half years based on the results of a youth survey.
- Because overqualified conscripts were being replaced with less qualified, but highly motivated volunteers, the selection criteria for soldiers (i.e., medical, physical fitness, and psychological exams) were changed to be more realistic. However, the RNLA did not reduce the essential requirements, established higher criteria in some cases, and preferred to maintain a vacancy as opposed to filling a post with an unqualified individual. Their actions kept with their "smaller should be better" mentality. It was estimated that the army would have to screen between 15,000 and 18,000 individuals to make their annual quota of 6,000.
- Some interesting notes from the previous two years were reported including: (1) a survey of commanders revealed they were very satisfied with the volunteers and impressed by their motivation and effort; (2) in each of the prior two years, more than 90% of vacancies were filled; (3) 20% of applicants were female; (4) between 50% and 70% of soldiers reenlisted; (5) 40% of applicants failed the psychological test; (6) 10% of male and 50% of female applicants failed the physical fitness exam; (7) 10% of applicants were rejected on medical grounds; and (8) attrition during the first few months of training was 10% to 15%.

Policy Management

Asch, B. J., Kilburn, M. R., & Klerman, J. A. (1999). *Attracting college-bound youth into the military: Toward the development of new recruiting policy options*. Santa Monica, CA: RAND National Defense Research Institute.

Model Category: Recruiting Management & Organization

Service: U.S. Armed Forces

- The authors assumed that the current recruiting difficulties experienced by the services were affected not only by environmental factors (e.g., unemployment rate, ratio of military to civilian pay, size of the youth population), but also by increasing competition from colleges for high-quality youth.
- Due to the increasing demand for skilled workers in the civilian labor force, the demand for a college education is also expected to increase.
- The military offers several options for obtaining a college education, and this may make the services more competitive with youth desiring such education. The authors noted, however, that some of these options involve enlistees entering college after their service requirements are complete, and therefore the services will not benefit from these service members' education *during* their period of service.
- Recommended policy options for attracting more college-bound youth included: (1) recruit more college drop-outs and individuals at two-year colleges; (2) allow high school students to attend college first (paid for by the military), enlist or serve in the reserves while in college, and become active after (In either case, the military would have to pay recruits more to account for their increased earning potential in the civilian marketplace.); or (3) the military could encourage enlisted veterans to attend college and then reenlist, returning at a higher pay grade.
- The authors recommended that each of these options be evaluated before being fully implemented.

Sellman, W. S. (1999, November). Reengineering and privatizing military recruiting in the U.S. Armed Forces. In S. R. Truscott (Chair), *Strategic Approaches to Recruiting*. Symposium conducted at the 41st Annual Conference of the International Military Testing Association, Monterey, CA.

Model Category: Recruiting Management & Organization

Service: U.S. Armed Forces

- The author briefly described several initiatives by the Office of the Secretary of Defense (OSD) designed to: (1) create or enhance military awareness; (2) identify and exploit new recruiting markets; (3) improve recruiter efficiency and effectiveness; (4) reduce enlisted attrition; and (5) enhance recruiter quality of life.
- The initiatives included: (1) testing the viability of online recruiting stations; (2) increasing military Internet traffic; (3) using civilian telemarketing; (4) using electronic fingerprinting at Military Entrance Processing Stations; (5) increasing public awareness of military benefits and opportunities among minorities; (6) creating shorter period enlistment requirements; (7) expanding Junior ROTC; (8) placing administrative assistants at recruiting stations; (9) expanding health care benefits to service members and their families; and (10) partnering military technical training with high schools and community colleges to offer an associate degree.
- According to the report, the OSD has contracted with Andersen Consulting to develop, test, and evaluate each of the initiatives.

Alderton, D. L., Blackstone, T. F., Mottern, J. A., & Watson, S. E. (1999, November). Three faces of attrition: Recruiting, the recruit, and the Navy. In S. R. Truscott (Chair), *Strategic Approaches to Recruiting*. Symposium conducted at the 41st Annual Conference of the International Military Testing Association, Monterey, CA.

Model Category: Recruiting Management & Organization

Service: U.S. Navy

- The Navy's strategy for addressing its recruiting and retention problems was discussed in this paper. It was expected that high attrition (the authors estimated that roughly 50% of individuals who enlisted in the Navy in the current year would not complete their 4-year contract) coupled with low reenlistment rates, would exacerbate the current recruiting problem by creating a greater demand for new recruits. Therefore, solutions to the recruiting problem should address broader issues, including those relating to individual recruits and the Navy as a whole, in addition to issues surrounding recruiting and its support systems.
- The Navy is studying advertising effectiveness and examining the effects on recruiter productivity of providing recruiters with communications technology (e.g., laptops, cellular phones). Additionally, the Navy is reexamining its recruiter training course and exploring the use of personality, social knowledge, and interpersonal skill measures to screen out individuals with a low probability for recruiting success.
- With regard to individual recruits, the Navy is exploring the use of a career/job interest inventory to improve person-job fit for Navy jobs. It is expected that this will increase job satisfaction, decrease attrition, and increase the likelihood of reenlistment.
- Finally, the Navy is redesigning its separation and retention survey to better identify and understand why sailors leave. A longitudinal study to examine person-organization fit is also in the development stage. This study would compare the needs, values, and expectations of new sailors to those of the Navy to determine how well they fit. This study will follow first-term sailors and assess multiple person-organization fit indices at critical points in their term (e.g., after advanced training, after the first job assignment, at the end of the first year, at reenlistment). It is hoped that this study will identify ways to align the needs, values, and expectations of sailors and the Navy.

Martin, P. E. (1999). *A multi-service location-allocation model for military recruiting*.

Unpublished master's thesis. Naval Postgraduate School, Monterey, CA. [AD A362 162]

Model Category: Recruiting Management & Organization

Service: U.S. Armed Forces

- The purpose of this work was to develop and test the Multi-Service Location-Allocation (MS-LOCAL) model to determine the optimal number of recruiters and most favorable recruiting site locations for each service within a geographic area, given the joint and potentially competitive recruiting influence of other services.
- The authors modeled two scenarios. In the first, they attempted to generate the greatest number of enlistments assuming fixed costs. The goal of the second scenario was to achieve a predetermined enlistment quota at the lowest possible cost. Costs incorporated into the model were categorized as start-up costs to open a new station, the cost for an additional

service to join an existing location, recruiter costs (estimated as either marginal costs of \$10,000 or a higher cost estimate of \$40,000), and travel.

- MS-LOCAL was developed as a mixed integer, linear model and solved with a two-stage algorithm. The authors tested the two forms of the model for the two cost structures on Army and Navy data obtained from the Jacksonville, Denver, and Boston metropolitan areas.
- When compared to the current configuration of recruiters and stations, their data indicated that current enlistment levels could be achieved with cost savings ranging between 10% and 30% by judicious placement of additional recruiters. Alternatively, effecting certain changes in the configuration of recruiters and stations could increase enlistments at comparable costs in all three areas. MS-LOCAL test results also suggested that collocating service recruiting stations could enhance both Army and Navy enlistment production.

Jarosz, S. K., & Stephens, E. S. (1999). *Allocation of recruiting resources across Navy recruiting stations and metropolitan areas*. Unpublished master's thesis. Naval Postgraduate School, Monterey, CA. [AD A361 844]

Model Category: Recruiting Management & Organization

Service: U.S. Navy

- The authors developed contract production models based on demographic and area characteristics at the recruiting station and metropolitan area levels.
- The number of high quality, male Navy recruits, segregated by zip code, from FY1995-97 was predicted using linear, log-log, and fixed effects models. In addition to standard demographic data, the authors included the number of Navy recruiters and stations, the number of Army recruiters and stations, co-located stations, and average recruiter travel distance as independent variables in their analyses.
- As hypothesized, increasing the number of Navy recruiters (and recruiting stations) increased recruits at both the station and metropolitan area levels. A 10% increase in Navy recruiters was associated with production increases of approximately 2% at the station level and up to 4.2% at the metropolitan area level. Related to this, production decreased as the average distance traveled by recruiters increased.
- Co-locating Army and Navy recruiting offices within the same area appeared to have complementary rather than competitive effects on Navy recruit production.
- Similar to previous research, unemployment and population densities had positive effects on enlistment production.
- The authors suggested that aggregating data at this lower station or area level of analysis (rather than district level, for example) can lead to more precise recruiter allocation decisions.

General Accounting Office. (1994). *Military recruiting: More innovative approaches needed*. Washington, DC: Author.

Model Category: Recruiting Management & Organization

Service: U.S. Armed Forces

- Based on a request from Senator Pryor, the GAO examined the DoD recruiting operations to identify areas in which military recruiting costs could be reduced.
- According to the GAO, the DoD may have overstated future recruiting challenges because: (1) the size of the target recruiting population is growing; (2) DoD does not need as large a percentage of the market as it has in the past to meet its requirements; (3) although propensity to enlist dropped in recent years, about half of the enlistees came from the groups who expressed negative intentions to join the military; and (4) in spite of the decline in propensity, the services have maintained recruit quality well above the DoD established benchmarks.
- In response to the National Defense Authorization Act for FY1993, all services planned to reduce recruiting staff by at least 10% by the end of FY1994. However, the act was repealed in 1995 and all services, except the USAF, subsequently planned to increase recruiter staff.
- The GAO contended that adding recruiting staff may not be necessary for the following reasons: (1) the recruiters' quota system places an artificial constraint on the number of accessions because recruiters are motivated only to meet their mission and not necessarily exceed it; (2) historically, the services have not reduced staff when accession needs have decreased; (3) the required number of accessions per recruiter has decreased; and (4) studies suggest that, after a certain number of recruiters are in place, it is more cost-effective to invest in more advertising rather than more recruiters. It was also noted that proposals to consolidate recruiting functions for all the services and to eliminate recruiting management layers have been rejected by the services.
- The report also discussed recommendations for closing and realigning offices to save money, specifically, reducing office size, eliminating separate facilities for recruiters' immediate supervisors, and reducing the number of offices in unproductive areas. One alternative to a fixed presence in less productive areas was using a mobile team of recruiters that would visit areas periodically.

Byrnes, P. E., & Cooke, T. W. (1988). *Recruiting efficiency and enlistment objectives: An empirical analysis* (CRM 87-181). Alexandria, VA: Center for Naval Analyses. [AD A196 267]

Model Category: Recruiting Management & Organization
Service: U.S. Navy

- This study examined the relative effectiveness of Navy recruiting districts by comparing the estimated maximum possible number of high quality (HQ) contracts (high school graduates with AFQT score category of III or above) in a district to its actual production of HQ contracts, and to the actual production of HQ contracts in demographically similar districts.
- Statistical regression and data envelopment analysis (DEA), a nonparametric, nonstochastic, piecewise linear technique, were used to estimate maximum production levels and examine production efficiency.
- Predictors included the number of recruiters, number of HQ youth, unemployment rate, percent of district that is urban, and military-civilian pay ratio. Data were aggregated at the Navy recruiting district level ($N = 41$) for the years 1981-1982 and 1984-1985.
- The authors estimated the maximum number of outputs (HQ contracts) possible for each district given their fixed level of inputs (predictors). The maximums were based on the number of contracts generated in the 'best practice' districts in a given year; all other

districts were compared to these best practice districts. A district was defined as technically inefficient if it produced less than the maximum number of contracts possible, given its fixed levels of inputs.

- Efficiency estimates from the DEA and regression analyses were similar. The overall technical efficiency of recruiting districts improved from 1981 to 1985. Production goal setting consistency also improved from 1982 to 1985. That is, recruiting districts operating in similar environments were given similar goals. However, recruiting goals in the Northeast tended to be lower than those of similar districts, probably due to greater difficulty recruiting in that area.
- The author concluded that this system could be used to redistribute recruiting goals. For example, districts that meet their goals but are technically inefficient (i.e., although the recruiting market could yield more contracts, recruiters may not be motivated to exceed their goals), should be assigned higher goals; districts that are technically efficient but do not meet their goals, should be assigned lower goals.
- Recruiting goals have been shown to be a source of both motivation and frustration for recruiters. A goaling system that accounts for demographic variables and production in similar districts may result in more technically efficient districts and should appear more equitable to recruiters.

Morey, R. C. (1987). *Impacts of size, composition, and compactness of the Delayed Entry Pool on enlistment contract production: Efficient allocation of recruiting expenditures and optimal DEP management*. Durham, NC: Duke University. [AD A192 941]

Model Category: Recruiting Management & Organization
Service: U.S. Navy

- Two models were developed to investigate the impact of DEP size, composition (i.e., recruit quality), and compactness (i.e., the percent of the next month's goal anticipated to be met from DEP) on total recruiter production and recruiting costs. The author hypothesized that a more compact DEP would allow recruiters to spend more time recruiting higher quality youth, whereas a less compact DEP would force recruiters to focus on recruiting directships, who generally are lower quality.
- A log-linear model regressed the production of A-cell and Cu-cell recruits on recruiting resource variables (e.g., number of recruiters, headquarters support costs, field level support costs, advertising costs, etc.), environmental variables (e.g., unemployment rate, number of qualified military available (QMA), percent of QMA that is Black, military/civilian pay ratio), and DEP management variables (e.g., size of DEP, DEP compactness, quality of recruits in DEP). (A-cell recruits refer to high school graduates scoring above the 50th percentile on the ASVAB and Cu-cell recruits refer to high school graduates scoring between the 31st and 50th percentiles.)
- Data on monthly contract production of non-prior service males and DEP sizes were available for all six Navy recruiting regions from 1984-1986.
- Results indicated that the size of DEP, local advertising expenditures, and local unemployment had a significant positive impact on both A- and Cu-cell production. Number of QMA and percent of Black QMA (negative weight) significantly affected A-cell production. Compactness of DEP only had a significant positive affect on Cu-cell production.

- The author developed a cost allocation optimization model that would select recruiting resources to meet accession goals and minimize resource cost.
- Not surprisingly, results indicated that increases in unemployment and the military/civilian pay ratio reduced recruiting costs. Also, results suggested that resources expended in national Navy advertising were more cost efficient than resources spent in field level support because national advertising has a larger impact on recruiter production than field support.
- A-cell contracts were more costly to recruit than Cu-cell contracts. The costs of recruiting one A-cell contract were the same as recruiting 4.44 Cu-cell contracts.
- Finally, results suggested that a more compact DEP would reduce the costs of recruiting three months downstream. The author recommended an average DEP size per recruiter of about 5 A-cell contracts and 4 Cu-cell contracts to minimize recruiting costs.

Evaluating & Enhancing Recruiter Performance

Borman, W. C., Hough, L. M., & Dunnette, M. D. (1976). *Development of behaviorally based rating scales for evaluating the performance of U. S. Navy recruiters* (NPRDC Technical Report 76-31). San Diego, CA: Navy Personnel Research and Development Center.

Model Category: Evaluating & Enhancing Recruiter Performance

Service: U.S. Navy

- This report documents the development and field testing of job performance rating scales for Navy recruiters.
- A critical incidents technique was used to identify aspects of effective/ineffective performance. The analysis yielded eight performance dimensions (Locating and Contacting Qualified Prospects, Gaining and Maintaining Rapport, Obtaining Information from Prospects and Making Good Person-Navy Fits, Salesmanship Skills, Establishing and Maintaining Good Relationships in the Community, Providing Knowledgeable and Accurate Information About the Navy, Administrative Skills, and Supporting Other Recruiters and the Command).
- The final Navy Recruiter Behavior Summary Performance Scales were used to obtain job performance ratings for 24 recruiters at 8 recruiting stations. (Stations consisted of 2-4 recruiters.) Peer, self and supervisor ratings were collected. Self and peer ratings showed the highest convergent and discriminant validity.
- The authors recommended the use of peer and self-ratings for the most reliable and valid appraisals. Supervisor ratings were recommended to provide an index of overall effectiveness, as well as provide summary information about the effectiveness levels of different recruiting stations.

Borman, W. C., Toquam, J. L., & Rosse, R. L. (1976). *Dimensions of the Army recruiter and guidance counselor job* (Technical Report 10). Minneapolis, MN: Personnel Decisions Research Institute.

Model Category: Evaluating & Enhancing Recruiter Performance

Service: U.S. Army

- This study detailed the use of multidimensional scaling and a clustering technique to identify the dimensionality of Army recruiter and guidance counselor job tasks.
- The results indicated four broad dimensions: Prospecting Activities, Publicizing the Army, Selling the Army, and Administrative Activities.

Borman, W. C., Russell, T. L., & Skilling, N. J. (1986). *Development of behavior-based rating scales and analysis of recruiter selection battery data for the Army recruiter job* (ARI Research Report 1441). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A184 497]

Model Category: Evaluating and Enhancing Recruiter Performance; Personnel Selection & Assessment

Service: U.S. Army

- This was a two-part research project. First, the authors developed behavior-based ratings scales to assess Army recruiter performance by revising the scales previously constructed for Navy recruiters (Borman, Dunnette, & Hough, 1976) in workshops with experienced Army recruiters.
- The eight performance dimensions from the Navy study were found to be adequate in describing Army recruiter performance. However, the Navy scale definitions and behavior anchors required considerable revision to make them relevant for Army recruiters.
- The dimensions were: Locating and Contacting Qualified Prospects, Gaining and Maintaining Rapport, Obtaining Information from Prospects and Determining Their Needs and Interests, Sales Skills, Establishing and Maintaining Good Relationships in the Community, Providing Knowledgeable and Accurate Information About the Army, Organizing Skills, and Supporting Other Recruiters and USAREC.
- Second, the Army's RSB-X, which contains personality and interest items from the Navy's SAB was administered to 417 students in an Army recruiter course.
- The results for items common to the SAB were compared to the previous Navy sample using the four personality keys (Selling Skills, Human Relations Skills, Organizing Skills, & Overall Performance).
- A factor analysis of the RSB-X items produced results very similar to those obtained in the Navy study.
- Overall Performance means on the Navy key were not significantly different for the Army and Navy sample, although, Army recruiters had significantly lower means on Selling and Human Relations Skills and a higher mean on Organizing Skills. However, the Navy sample consisted of recruiters with at least six months of experience, whereas the Army sample was comprised of students. Also, the Navy data was collected nine years prior to the Army sample.

Russell, T. L., & Borman, W. C. (1986). *Predicting military recruiter effectiveness: A literature review* (ARI Research Note 87-23). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A181 830]

Model Category: Evaluating & Enhancing Recruiter Performance

Service: U.S. Army

- This report summarized the research on recruiter effectiveness focusing on studies regarding supervisor ratings of performance, productivity criteria, environmental variables that impact production, and recruiter success in training. All of the research projects reviewed are discussed in this annotated bibliography.

Weiss, H. M. (1988). *Evaluation of recruiter performance measures and policy* (Research Report 1485). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A201 344]

Model Category: Evaluating & Enhancing Recruiter Performance

Service: U.S. Army

- Potential criteria for recruiter success were explored in order to examine the usefulness of the Army's Experimental Recruiter Selection Battery in predicting recruiter performance.
- The researchers met with Army personnel at Ft. Sheridan and at the Recruiting and Retention School at Ft. Benjamin Harrison. In addition to USAREC staff members, discussions were held with the USAREC Chief of Staff and several other Directors.
- The general consensus was that the primary indicator of recruiter success was mission accomplishment and whether they accomplished their mission while adhering to explicit rules and regulations.
- Other supplemental measures of performance were "zero rollers" (recruiters who consistently fail to enlist any recruits), performance awards, DEP loss, and relief from recruiting (possible reasons for being relieved included ineffective, unqualified, and unsuitable).

Jacobson, S. (1987). *Sales Training for Army Recruiter Success: Interviews with excellent recruiters* (Research Report 780). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Frieman, S. R. (1987a). *Sales Training for Army Recruiter Success: Interviews with excellent recruiters* (Research Product 87-37). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A191 326]

Frieman, S. R. (1987b). *Sales Training for Army Recruiter Success: Modeling the Sales Strategies and Skills of Excellent Recruiters* (Research Product 87-38). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A191 691]

Model Category: Evaluating and Enhancing Recruiter Performance
Service: U.S. Army

- The three reports listed above detail a linguistic modeling procedure used to identify the selling strategies and styles of nine exceptionally high performing Army recruiters.
- The recruiters were interviewed (unstructured) and observed in role-playing and in the field interacting with prospects.
- Based on the interviews and a protocol analysis, the procedures and patterns used by the successful recruiters were summarized according to where they corresponded to the sales cycle: prospecting, qualifying, rapport, needs and interests, sales presentation, closing, and handling objections.
- The results indicated that the recruiters varied in their personal styles and there was no overarching theme linking them.

Oken, C., & Asch, B. J. (1997). *Encouraging recruiter achievement: A recent history of military recruiter incentive programs*. Santa Monica, CA: The Rand Corporation. [AD A337 356]

Model Category: Evaluating & Enhancing Recruiter Performance; Recruiting Management & Organization
Service: U.S. Armed Forces

- The authors performed a historical review of the Army, Navy, Air Force, and Marine Corps national recruiting incentive programs. Incentives commonly used include trophies, plaques, letters of commendation, and promotional opportunities awarded for the achievement of targeted goals or for relatively high productivity in competition with other recruiters over specified time periods. Accession goals for all services, at the individual or unit level, generally include quantity (i.e., the number of new enlistments) quality (e.g., 95% of new recruits must have high school diplomas) diversity (e.g., Blacks, Hispanics) and targeted specialties (e.g., Nuclear Field Program, Officer Training School, nurse specialists, etc).
- Under the Army Program 300, recruiters earned a range of points for quantity and quality enlistments relative to their assigned monthly goals or mission box. Points could also be earned for team production, specialty program referrals, and overproduction. Successively higher honors were awarded for achieving a target number of points within subsequent six-month periods. The Army Program 300 was modified in FY1995 to encourage team or station performance rather than individual production (the Success 2000 program); however, these team incentives have subsequently reverted back to individually oriented incentives.
- The Navy incentive plans established in the last two decades include two categories of awards: promotions or promotional credits, and gifts, command recognition, trips, plaques, or commendations. Under the Navy's Freeman Plan, for example, individual recruiters could earn progressive incentives comprising certificates and medals (and promotional opportunity points) or meritorious advancements for enlistment production.
- The Recruiter Excellence Incentive Program, in use by the Navy as of 1997, establishes unit rather than individual goals; individuals receive promotional opportunities for their contribution to achieving district goals. Other awards that may be achieved include promotions for outstanding individuals in overproducing districts, Navy Achievement Medals, and attendance at Recruiter of the Year activities.
- The Air Force has two major incentive programs: a competitive national system designed to motivate enlistment production at the squadron and recruiting group levels and the Recruiting Service Incentive Awards Program that recognizes both individual and flight production. Unique to the Air Force plans are the breadth and the specificity of the categories for which production awards can be achieved (e.g., non-prior-service contracts, Black ROTC, physicians, dentists, minority officer training, flight success, etc.). Overproduction is stimulated in part through prestigious annual awards including Operation Blue Suit, Senior and Master Recruiting Badges, and the Recruiting Service Olympiad.
- Most Marine Corps incentive programs are developed, controlled, and rewarded at lower command levels. The one national program apportions quantity and quality contract goals to individuals through the command hierarchy and includes quotas exclusive to the Marine Corps program (e.g., terms of enlistment, overshipment). Marine recruiters must recruit into specific job classifications in contrast to their counterparts in the other services. National awards (e.g., Commandant's Superior Achiever Award, Recruiter of the Year) are presented to stations and individual recruiters based on "superlative" performance on a wide range of criteria.

Pry, D. A. (1996). *An analysis of the U.S. Navy goal-based recruiting system*. Unpublished master's thesis, Naval Postgraduate School, Monterey, CA. [AD A313 516]

Model Category: Evaluating & Enhancing Recruiter Performance
Service: U.S. Navy

- The current Navy program for setting recruiting goals and the incentive programs designed to facilitate those goals were reviewed. The Production Recruiting Incentive Model (PRIME), an alternative bonus incentive strategy, was proposed.
- The Commander, Navy Recruiting Command (CNRC) issues annual recruiting objectives for areas and districts. Individual recruiters are assigned goals based on CNRC objectives.
- The author concluded that producing accessions beyond the goal often results in higher goals for the next period. Accordingly, the current incentive system encourages a recruiter to achieve exactly his/her assigned goal and discourages overproduction. This goal-based system can lead to a recruiter saving potentials for the next period at the risk of losing the recruit entirely. These assigned goals and lack of recruiter input on goals discourage motivation and production in the recruiter workforce.
- Data from the previous five years showed negative trends in recruitment productivity and the number of districts achieving their recruitment mission. Further analyses were presented to support the author's contention that overproduction in one year can lead to higher mission assignments the next year.
- PRIME is argued to be a more efficacious model for motivating and rewarding recruiter performance, gaining market information, and achieving Navy recruiting goals. Under this proposed system, recruiters forecast the number of recruits they believe they will achieve in a one-year cycle. Points are awarded for actual production, with higher awards given to those recruiters who achieve their forecasted results. Additional points are awarded for production that exceeds targeted goals, discouraging the recruiter from saving potential recruits for the next measurement cycle.

Barfield, L. C. (1993). *An analysis of enlisted Navy recruiter productivity and incentive programs, FY 1988 - FY 1990*. Unpublished master's thesis, Naval Postgraduate School, Monterey, CA. [AD A273 154]

Model Category: Evaluating & Enhancing Recruiter Performance; Recruiting Management & Organization
Service: U.S. Navy

- This study examined differences in recruiter productivity across different recruiting districts and when recruiting individuals of different ethnicity and gender. Additionally, changes in recruiter productivity under different incentive plans were investigated.
- Data were available for recruiters ($N=8,220$) and A-cell (high school seniors and graduates in AFQT categories I-III; $N=284,243$) contracts for FY1988-90 and were analyzed using ANOVA and multivariate regression.
- Overall, results indicated that recruiters were more successful at recruiting individuals of the same ethnicity, regardless of gender. Although male and female recruiters produced male contracts equally effectively, female recruiters produced significantly more female contracts than male recruiters did.

- Geographic differences in productivity were also found. The Southwestern U.S. was most productive overall and for recruiting Hispanics, the Midwest was most successful at recruiting Whites, and the Southeast was most productive at recruiting Blacks.
- These results suggest that if the Navy wishes to increase the number of women and minorities in its service, it should increase the number of women and minority recruiters, especially in the most fertile areas for these recruits.
- Additionally, the author compared recruiter productivity under the Freeman Plan (FY1988-89) to recruiter productivity in the post-Freeman era (FY1990). The Freeman Plan was a recruiter incentive plan that emphasized individual performance, whereas incentives in the post-Freeman era were based on team performance.
- Although results indicated that the mean number of annual contracts per recruiter was higher in the post-Freeman era ($m = 11.19$) than under the Freeman Plan ($m = 10.79$), alternative explanations for these findings could not be ruled out.

Dertouzos, J. N. (1984). *Enlistment supply, recruiter objectives, and the All-Volunteer Army*. Santa Monica, CA: The Rand Corporation. [AD A152 552]

Model Category: Evaluating & Enhancing Recruiter Performance
Service: U.S. Armed Forces

- The author argued that econometric models that estimate the number of high quality enlistments are of limited value because they ignore variability in the demand for recruits (quotas) and recruiter performance.
- A log-linear model of high quality enlistment supply was tested that estimated elasticities (the percent change in enlistments for a one percent change in a variable) for civilian wages, number of QMA, unemployment, and number of field recruiters. This model was compared to a second supply model that added high and low quality enlistment quotas in addition to the variables used in the first model. The models were tested on data gathered from 33 Military Entrance Processing Stations (MEPS) for 1980 and 1981.
- Results from the first model yielded significant elasticities only for unemployment and number of field recruiters. However, in the second model, the high and low quality quota variables (negative weight), unemployment, and number of field recruiters yielded significant elasticities indicating that recruiting goals also affect the number of high quality recruits for the armed forces.
- Additionally, the author suggested that although all recruiters have ample motivation to meet their quotas, they may not have sufficient incentives to exceed them. For example, recruiters who exceeded their quotas in 1980 received relatively higher quotas in 1981. He argued that high performing recruiters' production might not be affected by fluctuations in economic or market conditions.
- In order to examine this possibility, the ratio of high quality enlistees to quota was calculated for each recruiting area within the 33 MEPS, and each recruiting area was classified into two groups (high and low achievers) based on a mean-split. (The average was .92, indicating that on average, 92% of quota was met with high quality recruits.)
- The first enlistment supply model was tested separately for each group and differences were found. For the high achiever group, only number of QMA (negative weight) had a significant elasticity, whereas the elasticities for wages (negative weight), unemployment,

low quality quotas (negative weight), and number of recruiters were significant for the low achiever group.

- These findings indicated that low producing recruiting areas are more likely to be affected by changes in economic conditions and, perhaps more importantly, they suggested that the highest producing recruiting areas may not benefit from favorable changes in economic conditions. However, it is possible that other variables may account for the differences found.
- Recruiter behavior appeared to be an important determinant of total accessions beyond changes in economic and demographic conditions. Although quotas do motivate recruiter productivity, they may also inadvertently limit productivity in the highest producing recruiting areas.

Arima, J. K. (1977). *Determinants and a measure of Navy recruiter effectiveness* (TR 78-21). San Diego, CA: Navy Personnel Research and Development Center. [AD A055 800]

Model Category: Evaluating & Enhancing Recruiter Performance; Enlistment Decision
Service: U.S. Navy

- The authors scored 268 recruiters in three recruiting districts on educational environment variables, such as Average Pay for Local High School Teachers and Average Daily Attendance in Local High Schools, as well as two dummy variables representing district membership.
- Roughly one-third of the variance in raw number of accessions was accounted for when the environmental variables were entered into a stepwise multiple regression.
- A problem with this study was that the environmental characteristics within each district were not explored separately from the summary district membership predictor. The district membership variable essentially provides an estimate of the maximum variance it is possible to account for in district differences by all environmental factors. Future research should separate the specific environmental factors from district membership.

Marketing

Tannahill, S. L. (1996). *Navy advertising--from budget to execution, a trend analysis of national advertising awareness*. Unpublished master's thesis, Naval Postgraduate School, Monterey, CA. [AD A312 910]

Model Category: Marketing

Service: U.S. Navy

- The cost-effectiveness of the Navy's advertising program was assessed by examining its effects on advertising exposure, national awareness, and youth attitudes (propensity).
- Advertising exposure was measured by the number of people exposed to advertisements (e.g., magazine circulation, size of television audience). The number of leads generated measured national awareness, as indicated by the number of phone calls made to an 800-number displayed in various Navy recruiting ads.
- Monthly data were available from FY1993-95 on advertising budget expenditures, exposure for Navy general enlisted (as opposed to officer) advertisements, leads generated from television, magazine, and radio ads, youth propensity (YATS), advertising awareness among new recruits (New Recruit Survey), and unemployment.
- Not surprisingly, advertising expenditures and exposure were strongly correlated ($r = .78$). Advertising expenditures were not significantly correlated with the number of leads generated during the same month ($r = .11$); stronger relationships were found, however, using three- and four-month after advertising expenditures ($r = .32$ and $.35$, respectively).
- No evidence was found to indicate a relationship between advertising expenditures and youth propensity or between unemployment and leads generated.
- This study provided useful information by examining actual behavior of the target population in response to advertising (i.e., phone calls to an information number displayed in advertising) rather than the relationship between advertising and enlistment rates, which can be affected by several other factors (e.g., recruit qualifications, recruiter behavior).

Hintze, W., & Lehnus, J. (1996, November). *Recognition of military advertising slogans among American youth*. Paper presented at the 38th Annual Conference of the International Military Testing Association, San Antonio, TX.

Model Category: Marketing

Service: U.S. Armed Forces

- The authors examined the impact of various military advertising campaigns by looking at slogan recognition trends among male and female youth. Data from the 1987-1995 Youth Attitude Tracking Study (YATS) were used.
- Survey respondents were read actual advertising slogans and asked to identify the Service that used it. The Army's "Be All You Can Be" and the Air Force's "Aim High" had the highest recognition levels among males (91% and 82% respectively) and females (88% and 62% respectively). However, although recognition of the Army's slogan has increased since 1987, recognition of the Air Force slogan has decreased.

- The Marine Corps slogan, "The Few. The Proud" also had high recognition among males (71%), but this rate has also decreased since 1987. The Navy's "You and the Navy. Full Speed Ahead" demonstrated the largest growth in recognition among males, increasing from 41% in 1990 to 54% in 1995.
- Youth that attributed a slogan to the wrong service tended to attribute the slogan to the Army. However, the Joint Service slogan "Stand up. Stand out." and the National Guard slogan "Americans at Their Best" were more likely to be attributed to the Marine Corps.

Specialized Advertising Research Services. (1998). *Awareness and attitudes tracking study: Wave III Final Report*. Irving, TX: Bozell, Jacobs, Kenyon, & Eckhardt, Inc.

Model Category: Marketing

Service: U.S. Air Force

- Telephone interviews were conducted with 460, 15-22 year-olds to assess their attitudes towards military service, career plans in general, and U.S. Air Force (USAF) careers specifically, as well as their awareness of USAF advertising.
- Participants in the study were screened to reflect the demographics of the population (e.g., 50% male, 50% female, 80% Caucasian, 20% minority) and were evenly distributed among three age groups (15-17, 18-19, 20-22). Additionally, all participants were screened to meet the following criteria: not married, a high school graduate or presently in high school, not currently in the Armed Forces, not related to anyone currently in the armed forces, and not negatively predisposed to joining the armed forces.
- In general, participants appeared to have low levels of awareness (i.e., brand recall, advertising recall) of the USAF and USAF advertising in relation to other services, particularly the Army. However, more participants would prefer to join the Air Force (30%) than the Navy (22%), Army (20%) or Marines (17%). This finding held true across age, gender, and race.
- Thirty-six percent of respondents indicated they had considered joining the military at one time in their life, and 15% said joining the military was still a possibility. Results also indicated that individuals who consider a military career were most likely to do so between the ages of 15 and 17. Those who decided against a military career generally did so before age 19.
- Overall, participants had no strong opinions either way about an Air Force career, but more than 60% felt that the Air Force did not have a career that would interest them.
- The most highly rated Air Force attributes were technological savvy, respecting members as individuals, and offering upward career mobility.
- The most highly rated career attributes were working for an employer that "respects you as an individual" (most important), "prepares you for a better career later on," and "helps you further your education." The least important career attribute reported was working for an employer "that represents the cutting edge of technology."
- Ninety-three percent agreed that the Air Force provides training for a career and not just a job. More than half agreed that the Air Force is an equal or better alternative to a civilian career or college.
- Finally, participants perceived themselves as more friendly, honest, caring, educated, unique, and respected than someone in the Air Force, but equally hardworking and

disciplined. An individual in the Air Force was perceived as being more of a leader and more technologically savvy.

- These findings are especially interesting because the individuals sampled had no negative predispositions toward the military and, as the authors pointed out, were more likely to be receptive to positive messages about the Air Force.

Hintze, W., & Lehnus, J. (1998, November). Media habits and Internet usage among America's youth. In D. McCormick (Chair), *Current Findings from the 1997 Youth Attitude Tracking Study (YATS)*. Symposium conducted at the 40th Annual Conference of the International Military Testing Association, Pensacola, FL.

Model Category: Marketing

Service: U.S. Armed Forces

- Using data from the 1996 and 1997 YATS, the authors examined media and Internet habits among youth.
- Results indicated that youth spend more time daily watching television, listening to the radio and on the Internet than reading newspapers or magazines. However, time spent on the Internet was approximately half of the time spent either watching television or listening to the radio.
- Not surprisingly, the percent of youth with Internet access increased approximately 12% between 1996 and 1997. This increase was seen across gender, race, and education levels.
- In general, Internet usage was greater for Whites than for Blacks or Hispanics, regardless of gender. Forty-nine percent of males and 39% of females access the Internet on at least a weekly basis.
- The percent of youth that had visited a home page for one of the military services was low but had more than doubled from 3.3% of males and 1.5% of females in 1996, to 8.1% of males and 4.1% of females in 1997.
- Based on these findings, the authors suggested that the Internet could be an effective way to provide information to youth about military service.

Research Services. (2000). *Air Force website evaluation: Wave III Final Report*. Irving, TX: Bozell Kamstra.

Model Category: Marketing

Service: U.S. Air Force

- Reactions to the Air Force website were assessed with an on-line survey of a sample of 400, 15-22 year olds. The sample was evenly divided between males and females, and between 15-17 year old high school students and 18-22 year old high school graduates. All respondents were single with no children, had no members of their household currently employed by the military, and owned a computer.
- The majority of participants spent at least one hour a day browsing the Internet, and 31% spent more than 15 hours per week online. Sending and reading email were the most popular online activities (99%). Other activities included completing registration forms (77%), downloading plug-ins (72%), and playing web-based games (68%).

- By and large, reactions to the Air Force website were favorable. The pages, content, and images were well liked, often exceeding participant expectations.
- Additionally, participants found the site easy to navigate and were very interested in plans to add multi-player games, a chat room with members of the Air Force, and Air Force news and web casts.
- Although only 44% of respondents said they would contact a recruiter if they were considering a career in the Air Force, 76% said they would visit the website.
- The Air Force information respondents were most interested in obtaining online included educational opportunities, scholarships and ROTC, career/job information, and what everyday life is like in the Air Force. Finally, more than half of respondents indicated that their perception of the Air Force improved after visiting the website.
- This report suggested that Internet websites may be an effective method for disseminating information about military service to the youth population.

Eskins, C. J. (1997). *An analysis of advertising effectiveness for U.S. Navy recruiting*. Unpublished master's thesis, Naval Postgraduate School, Monterey, CA. [AD A341 072]

Model Category: Marketing
Service: U.S. Navy

- The author explored the relationship between various advertising media expenditures and Navy enlistment contracts for male, high quality recruits (high school graduates who score 50 or more on the AFQT). A focused literature review suggested recruiting researchers do not always delineate the influence of advertising based on media type.
- The author regressed the number of high quality recruit contracts achieved monthly from FY1991-95 on various economic factors and the numbers of stock monthly advertising impressions from diverse media sources (i.e., the number of times that the 18-24 year old market is exposed to the message). Stock monthly advertising impressions were calculated as the sum of exposures for the previous 12-month period.
- Consistent with previous research, the data showed that enlistment contracts are a function of traditional predictors such as the number of recruiters, the supply of males available, unemployment rates, and military and civilian pay ratios. Regarding the primary purpose of the study, results indicated that the number of high quality recruits was also a function of impressions from Navy advertisements on television, radio, direct mail advertising, and multi-service television advertising.

Howell, R. D., Wilcox, J. B., & Wilkes, R. E. (1988). *Modeling the effects of Army advertising* (Technical Report 821). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A207 289]

Model Category: Marketing
Service: U.S. Army

- Researchers modeled the complex relationships among 12 constructs to explore the effects of Army advertising on beliefs, intentions, and enlistment behavior.
- Data on cognitive, affective, and behavioral variables related to advertising and the enlistment decision were collected in 30 minute interviews in 1986 and 1987 with a national

sample of males ($N = 2,534$) and the parent(s) of these youth ($N = 2,534$). The data were collected as part of the Army Communications Objectives Measurement System (ACOMS) project.

- Using covariance structure modeling, the researchers determined that the perception of the Army by youths and their parents can be described by a general affect factor, plus three additional factors: beliefs about opportunities for personal development, beliefs about the Army experience itself, and beliefs about future opportunities arising from service. However, the Army attributes that were factor analyzed reflected attributes of the Army emphasized in advertising (e.g., chance to work with the latest hi-tech equipment) and may not have captured the factor structure of Army perceptions entirely.
- Enlistment activities were predicted by Social Influence (e.g., how others would feel if the youth joined the Army), knowledge of Army offers, and intentions to "do something about enlistment."
- Intention to engage in enlistment activities was predicted by knowledge of Army offers, liking of Army ads, and social influence.
- Other findings include: (1) parents have a significant impact on youth's enlistment decisions, (2) peers have a significant influence on youth's perceptions of the Army, and (3) recall of Army ads was related to hours spent watching TV.
- The authors concluded that Army advertising has been reasonably successful. Respondents to the survey tended to recall, like, and believe Army ads. These beliefs were related to favorable feelings about the Army that were related to intentions to take some enlistment action.

Baxter, S., & Gay, N. L. (1988). *The message content of advertisements for active Army enlistments* (Research Report 1473). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Model Category: Marketing
Service: U.S. Army

- Youth impressions of Army advertising were examined by having 16-to-24 year old males and females ($N = 3,665$) view Army video and print ads. Respondents were contacted in urban shopping malls, shown ads, and participated in a 15-minute interview conducted as part of the ACOMS project.
- Results indicated that unaided recall of Army ad sponsorship was 86.5% for video and 78.8% for print ads.
- Different attributes of the Army were recalled for the different media. The attributes perceived most frequently in video ads were the presence of high-tech equipment, experience to be proud of, and the opportunity to develop one's potential. For print ads, money for education and pride in the experience were perceived most frequently.
- Males and Whites perceived the ads communication objectives more frequently than females, Blacks and others in both the video and print ads.
- The authors noted that the ads appeared to convey their intended message, but an adventure and excitement attribute could be added.

Elig, T. W. (1988). *Targeting the delivery of Army advertisements on television* (Research Report 1484). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A199 495]

Model Category: Marketing
Service: U.S. Army

- The media habits of a sample of 1,847, 16-21 year old males and an overlapping sample of 1,676, 18-24 year old males were assessed as part of telephone interviews conducted for the ACOMS project.
- This report describes the TV viewing and radio listening habits of this group in order to direct future advertising initiatives.
- For example, the ARI researchers found racial differences in self-reported television program viewing. They also found that more high school graduates watch Monday Night Football and college football than non-high school graduates. However, these results are over 10 years old and may need to be updated.

Baker, T. A. (1990). *A cross-sectional comparison of Army advertising attributes* (Research Report 1578). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A233 737]

Model Category: Marketing
Service: U.S. Army

- This research was aimed at identifying the impact that advertising had on perceptions of Army opportunities among youth, new soldiers, and experienced soldiers.
- Advertising attribute items (which assessed perceptions of available opportunities in the Army) from the New Recruit Survey (NRS; 18 items, *N* not stated), Recruit Experience Tracking Survey (RETS; 14 items, *N* = 4256 active Army soldiers), and the ACOMS (13-14 items, *N* = 24,488 active Army, non prior service (NPS) soldiers and *N* = 12,955 16-to-24 year old youth) were examined and factor analyzed. Data were collected between 1986-1989.
- A factor analyses of the NRS items yielded three factors: Self-Improvement, Work-Related (work aspects in the Army), and Women's Benefits (opportunities and benefits for women). The RETS yielded two factors (Self-Improvement/Education and Work-Related) and the ACOMS yielded one factor for the Army, Navy, Air Force, Reserves and National Guard samples (General Opportunity) and two factors for the Marine Corps (Self-Improvement and Work/Education).
- Comparisons between groups indicated that new soldiers (NRS) and youth (ACOMS) perceive more opportunities in the Army than do experienced soldiers (RETS). However, the authors note that the responses of the new soldier samples may have been influenced by recruiter contact or Army experiences as well as by advertising.
- Respondents saw aspects of self-improvement and money for education as opportunities that the Army offered. Work-related opportunities were not as positively regarded as self-improvement opportunities. The authors recommended that ads for the Army focus on Army as a positive step between high school and college in addition to work-related opportunities.

Elig, T. W., Weltin, M. M., Hertzbach, A., Johnson, R. M., & Gade, P. A. (1985). *U.S. Army advertising from the recruits' viewpoint* (Research Report 1407). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A163 824]

Model Category: Marketing

Service: U.S. Army

- This report details results of the 1982 Department of the Army Survey of Personnel Entering the Army and the 1983 ARI Survey of Recruits administered to a sample of NPS accessions in the Army and Army Reserve ($N = 8,341$).
- The surveys were designed to assess enlistment motivation, personal background, and media habits (e.g., TV viewing, music preferences, recall of specific advertisements).
- Comprehensive details regarding the responses for each item by demographic characteristics, such as gender, race, and AFQT scores were provided.
- Instances where advertising was successful were described. For example, high school graduates had higher recall of a direct mail campaign aimed at graduates than did non-graduates.

Youth Supply, Characteristics, & Influencers

Youth Supply

Ree, M. J., & Earles, J. A. (1991). *Estimates of available aptitude as a consequence of demographic change* (AL-TP-1991-0019). Brooks Air Force Base, TX: Armstrong Laboratory, Human Resources Directorate. [AD A238 296]

Model Category: Youth Supply, Characteristics, & Influencers
Service: U.S. Air Force

- Using demographic data and ASVAB test scores from a sample of 9,173 male and female youth collected in 1980, the authors estimated the size of the 18 to 23 year-old population in the United States by race and by AFQT category for the years 1990, 1995, 2000, 2005, and 2010.
- Their results indicated an overall decrease in the number of service-aged youth, from approximately 25.4 million in 1980 to 20.4 million in 1995. This population is expected to increase by the year 2010 to around 23.3 million. This number is still lower than the 1980 population level, however.
- In addition to the expected decrease in the total number of youth, the quality of available youth, as indicated by AFQT category, was predicted to change. It was estimated that 51.4% of youth would qualify for AFQT categories I-IIIa in 1980. However, only 48.9% of youth are expected to qualify for those categories by 2010.
- The youth population is also expected to be increasingly diverse as the proportion of White youth is projected to decrease (compared to 1980 levels) from 80% to 74% by 2010; the Black and Hispanic youth populations are expected to increase from 14% to 16% and 6% to 10% respectively.
- These estimates suggest that the U.S. Armed Forces will have increased difficulty recruiting high quality youth for service. This will be especially true for officers and technical positions that require individuals from higher AFQT categories.

Orvis B. R., Sastry, N., & McDonald L. L. (1996). *Military recruiting outlook: Recent trends in enlistment propensity and conversion of potential enlisted supply*. Santa Monica, CA: RAND. [AD A322 262]

Model Category: Youth Supply, Characteristics & Influencers; Propensity; Recruiting
Management & Organization
Service: U.S. Armed Forces

- The purpose of this work was to examine the military recruiting environment from the end of the Cold War (i.e., 1989), particularly considering the reductions in recruiting resources and accession requirements. Specifically, the authors analyzed enlistment propensity (potential supply) and reviewed research related to the conversion of potential supply to enlistments.
- Analyses of data from the YATS and Military Entrance Processing Command (MEPCOM) showed that stated propensity is strongly predictive of enlistment decisions. Of high quality

males, age 16-22, who stated their intention to join the military when asked, "What do you think you might be doing the next several years?" (categorized as "unaided mention"), 34.4% eventually enlisted. By contrast, only 5.1% of youth reporting a negative propensity (3/4ths of the target population) enlisted. Trend analyses showed an overall decline in positive propensity from FY1989, with the steepest declines in FY1992-93 and FY1994-95. When these data are categorized by race-ethnicity, the negative trend is much greater for African Americans than for either Whites or Hispanics. This reduction in potential supply may not be problematic however, in that accession requirements were similarly declining during this time period.

- The authors computed refined indices of supply relative to accession requirements using enlistment rates for positive and negative propensity groups, annual youth population, and accession rate data. These ratios were then compared to the ratio from the last pre-drawdown year (FY1989).
- Although their results showed a declining trend from FY1994-97, enlistment supply was more than adequate to meet reduced accession requirements for FY1994-95. By FY1996 and FY1997 respectively, the supply of potential enlistees matched and then fell below accession requirements, particularly for the Army and Marine Corps. These data suggest that the difficulties recruiters experienced in reaching targeted goals in FY1994-95 may result from their inability to successfully recruit as opposed to an inadequate supply. Since 1996, however, declines in propensity and enlistment supply have compounded recruitment problems.
- The authors also reviewed data from the YATS and the DoD Recruiter Survey (1991, 1994) to identify potential recruitment problems (e.g., enlistment discussions between youth and key influencers, recruiter access to, and patterns of contact with, potential enlistees, etc.).
- Analyses of the two data sets showed: (1) fewer youth report discussing joining the military with key influencers (i.e., parents, friends, counselors); however, the percentages are consistent with the overall decline in propensity; (2) those highly important discussions are not increasingly negative; (3) recruiters' access to students and to students' ASVAB scores has not declined; (4) recruiter levels of contact have remained the same with high school *graduates* but have declined with high school *students*; and (5) fewer high schools are participating in ASVAB testing, with a corresponding decrease in students being tested.
- The authors recommended research to determine if recruiting shortages are job or location specific and then increasing in advertising, numbers of recruiters, and enlistment incentives targeted to meet those deficiencies.

Hagerty, T., Zucker, A. B., & Lehnus, J. D. (1999, November). *Demographic factors and the recruiting environment*. Paper presented at the 41st Annual Conference of the International Military Testing Association, Monterey, CA.

Model Category: Youth Supply, Characteristics, & Influencers
Service: U.S. Armed Forces

- The authors discussed population trends that could affect military recruiting.
- Although the population of 18- to 19-year-old youth is expected to increase 1.7% per year from 6.6 million in 1994 to approximately 7.9 million in 2004, recruiting will be more challenging because of changes in youth motivation for higher education, lower civilian unemployment rates, and the reduced veteran population.

- For example, in 1985, 58% of high school graduates enrolled in college within a year of graduation. This figure increased to 67% by 1997 and is projected to be as high as 72% in 2005.
- Additionally, unemployment among 19-24 year-old high school graduates who are not students and who do not have bachelor's degrees has declined sharply since 1995, while median wages for this population have increased.
- After the Cold War, 40% of fathers of eligible youth had served in the military. In 1998, only 26% of eligible youth had fathers that had served and this figure is expected to decrease to 16% by 2005. This steady decrease is expected to make recruiting more difficult because parents may influence youth career decisions away from military service.

Murray, M. P., & McDonald, L. L. (1999). *Recent recruiting trends and their implications for models of enlistment supply*. Santa Monica, CA: RAND National Defense Research Institute. [AD A360 747]

Model Category: Youth Supply, Characteristics, & Influencers
Service: U.S. Armed Forces

- The authors developed econometric models to predict the number of high quality, non-prior-service accessions. Unlike other studies that utilized data at the state level, this study used monthly data from geographic areas defined by the Census Bureau (public-use microdata areas or PUMA) that are smaller than a state, but larger than a county.
- Separate models were developed for each of the four services, and each included variables related to youth opportunities available (e.g., military to civilian pay ratio, unemployment, enlistment bonuses) and recruiter effort (e.g., number of recruiters, high and low quality recruit goals, goal performance in the previous month, number of qualified military available (QMA)). Furthermore, to investigate the effects of the military's overall mission (e.g., to contain the "Evil Empire" versus peacekeeping), the authors compared data from the Cold War years (FY1983-87), to data from the recent drawdown years (FY1990-93).
- Results indicated that, generally across services, favorable military-to-civilian pay ratios, high unemployment, more recruiters, greater high quality recruiting goals, greater numbers of QMA, and enlistment bonuses and the Army College Fund significantly increased the number of high quality, non-prior-service contracts signed.
- Similar to earlier models, the current models, based on 1980s data, over-predicted the number of high quality contracts and failed to account for some of the recruiting difficulties of the 1990s.
- The findings also suggested that the number of Army and Air Force recruiters appears to have a smaller impact on the number of high quality enlistees in the drawdown years when compared to the Cold War years. Although the reasons for this apparent decline in recruiter effectiveness are not known, the authors speculated that decreased youth interest in military service and/or changes in recruiting resource allocation/management during the drawdown are possible explanations.
- As a final note, the authors commented that using PUMA level data was problematic and did not yield a substantial decrease in standard errors to offset the additional cost of gathering data at this level.

Verdugo, N., & Berliant, K. R. (1989). *Estimating the Army's prime recruiting market* (Research Report 832). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A210 850]

Model Category: Youth Supply, Characteristics, & Influencers
Service: U.S. Army

- Based on data collected from the Census Bureau, Department of Education, DoD, and Veterans Administration, the authors predicted that the prime recruiting market for the Army would decrease by roughly 21% between 1985 and 1995, suggesting that Army recruiting would be more difficult in the 1990's.
- The prime market was defined as 17-21 year old males who score in the upper half on the AFQT, are high school graduates, are morally and physically qualified for military service, have not been institutionalized, are not in military service, have no prior service, and are not in college.

Shavelson, R. J., Haggstrom, G. W., & Winkler, J. D. (1983). *Potential for military recruiting from two-year colleges and postsecondary vocational schools* (N-1946-MRAL). Santa Monica, CA: The Rand Corporation. [AD A126 206]

Model Category: Youth Supply, Characteristics, & Influencers
Service: U.S. Armed Forces

- The purpose of this report was to determine whether two-year colleges and postsecondary vocational schools are fertile recruiting environments for generating high quality, high performing enlistees, and whether this market could be penetrated.
- The authors reviewed literature pertaining to recruiting these populations, as well as market studies and demographic data describing this population.
- Their review indicated that these institutions contain a significant number of individuals with the qualities that recruiters are seeking. The authors noted that two-year college students are greater in number and of higher quality than students in vocational/technical schools are and recommended increased recruiting in two-year colleges, while recruiting for critical specialties in the vocational/technical schools.
- With regard to the penetrability of these markets, few studies had been conducted and the military had not yet made a sustained effort to recruit this population. However, research indicated that junior college and vocational school students have unstable career paths and may be open to different career choices, including a military career.
- Career guidance plays a large role in two-year colleges suggesting that students may be open to recruiting. The career guidance systems may also provide a formal mechanism through which recruiting may be conducted. The authors cautioned, however, that support for recruiting within these institutions would likely depend on the perception that the military is not competing with them for students.
- A potential difficulty in recruiting in this arena is that recruiters with no college experience may be unfamiliar with the population and environment, may have different values than students, and hence, may be reluctant to recruit in this market.
- The authors recommended that further research be conducted to gather more recent data on the characteristics and behaviors of these populations, to determine the recruiter qualities

needed to be successful in these environments, and that an experiment be conducted to determine the penetrability of these markets.

Shavelson, R. J., Haggstrom, G. W., & Blaschke, T. J. (1984). *Two-year colleges and vocational schools as sources of military manpower* (N-2193-MIL). Santa Monica, CA: The Rand Corporation. [AD A149 763]

Model Category: Youth Supply, Characteristics, & Influencers; Marketing
Service: U.S. Armed Forces

- The purpose of the study was to determine whether two-year colleges and postsecondary vocational schools provide a viable secondary recruiting market to reach concentrated numbers of potentially able recruits. The authors attempted to identify successful recruiting strategies to target this market.
- The authors initially examined relevant demographic and institutional data to determine the size of the market. Their data showed that the greatest percentage of high school graduates to attempt postsecondary education attend two-year public colleges, the majority of which are located in the 10 most populated states.
- As hypothesized, two-year college freshmen are predominantly high school graduates, single, between 18-21 years old, with a higher general aptitude than are those planning to join the military or to enter civilian life. Enlisted personnel with between one and two years of college were also shown to have the lowest military attrition rates.
- Standard recruiting tactics include following up on individuals for the first two years after high school graduation. In addition, although the Army, Navy, and Marines have instituted programs designed to target this market, identified goals have generally not been achieved. Problem areas included a perceived competition with colleges for the same students, disincentives in current recruitment programs to actively pursue two-year college students, and issues surrounding the selection and training of a 'college recruiter' who would compete with regular recruiting staff.
- The authors used regression analyses to examine military and demographic data from FY1982 enlistees who had some college education but were not college graduates. Despite extensive analyses, they were unable to identify any areas of the country that have shown particular success in recruiting students in two-year or vocational schools that could not also be explained by social, geographic, or economic factors.
- Recruiters who had demonstrated success enlisting recruits from two-year or vocational schools ($N=18$) were also identified, interviewed, and compared with other recruiters ($N=26$) in terms of demographic characteristics and recruiting strategies. Results failed to show any systematic differences in characteristics, perceptions, or targeted strategies between the two groups.
- The authors concluded that although two-year colleges and postsecondary vocational schools could provide a source for high ability recruits, their relative numbers in comparison to the high school market, and historically low impact on overall accessions, may be problematic for targeted recruiting programs. They recommended that the Department of Defense should identify and track recruits from this market and conduct further research to determine its long range potential.

Golfin, P. A. (1998). *A summary of Navy recruiting efforts in community colleges in FY 1997* (CRM 97-139). Alexandria, VA: Center for Naval Analyses. [AD B235 264]

Model Category: Youth Supply Characteristics & Influencers; Marketing
Service: U.S. Navy

- Community colleges provide an attractive recruiting market because more high school graduates are attending postsecondary institutions, two-year college graduate recruits average higher AFQT scores with lower attrition rates than high school graduates, and training costs may be reduced if this source can be successfully recruited. The author summarized results from the Navy's efforts to recruit selected medical specialties from this market for FY1997 and made program recommendations for the future.
- In FY1996 and 1997, the Navy instituted or expanded programs to recruit pretrained Hospital Corpsmen (HC) for targeted specialties from the community college market. Despite these efforts, associate degree accessions increased only 4.8% (17 people) from 1996 to 1997.
- Recommendations for programs to impact the college recruiting market included: (1) expansion of the college Loan Repayment Program (LRP) currently available for only selected specialty ratings; (2) development of Navy recruiting partnerships with local community colleges to provide mutual benefit (e.g., college degrees tailored to high-tech Navy specialties could increase college enrollments and provide a source of trained experts for the Navy); and (3) use of Advanced Programs Outreach Team (APOT) activities to facilitate both enlisted personnel and officer level recruiting. In particular, job fairs might provide access to potential recruits, and tuition assistance would encourage recruiters to take college classes, increasing their familiarity with college life and the military's visibility on campus.
- The author also suggested that Recruiting Advertising Devices (RADs) designed for the community college student should be available, and the Navy's use of the Internet for job advertisements (American Job Bank) and resume searches should be expanded.

Fisher, A. H., Pappas, L. D., & Shepherdson, S. (1975). *Navy recruitment potential in junior colleges* (Institute Report 76-1). Washington, DC: Hay Associates. [AD A013 670]

Model Category: Youth Supply, Characteristics, & Influencers
Service: U.S. Navy

- In order to examine the recruitment potential of junior college students, 807 male students from a national probability sample of 20 junior colleges were surveyed regarding their attitudes toward military service, career intentions, and exposure to recruiting media and personnel.
- The majority of the sample was single, White, 18-21-years old, from middle to upper income families, employed, attended high school full-time in the immediate area, and expected to attend a four-year college. Also, 74% scored in the top two quartiles on a test of verbal ability, compared to 46% of the total general youth population.

- Twenty-six percent had an overall favorable attitude towards military service, whereas 29% had an overall unfavorable attitude. Those most favorable toward the military were younger and of lower mental ability.
- Respondents had military enlistment intentions equal to or higher than those found in other studies of civilian youth. Ten percent of respondents intended to join the active duty enlisted force, 13% intended to join the active duty officer force, and 11% intended to join the Reserves or National Guard. Officer programs were preferred more by students planning to attend a 4-year college than students on a vocational track.
- The job characteristics most frequently endorsed as very or extremely important were "guaranteed employment" (84%) and having "direct responsibility for what you do" (82%). The least frequently endorsed were "job in which you can serve your country" (24%) and "chance to work with engines and machines" (17%); however, respondents with positive propensity were more likely to endorse these latter two items.
- The most popular reasons cited for enlisting were "I want my choice of branch of service," "learning a trade/skill applicable to civilian life," and "opportunity for professional/technical training." These results were similar to those of studies of youth in general.
- Although no differences in propensity were found for respondents with varying levels of familiarity with recruiting advertising, respondents who had in-person contact with a recruiter, as compared to those who had no contact, were more likely to have positive propensity.
- Most respondents (54%) indicated they would prefer to talk to a recruiter, preferably an officer, to gain information on Navy service, rather than reading Navy literature (26%). The principal career influencers were parents and male peers.
- Although these findings indicated a favorable market for recruiting in junior colleges, this report is 25 years old. Current information on this market would be more relevant to today's recruiting environment.

Borman, W. C., Rosse, R. L., & Toquam, J. L. (1982). *The impact of environmental factors and consideration of recruit quality on Navy recruiter production* (Institute Report 78). Minneapolis, MN: Personnel Decisions Research Institute.

Model Category: Youth Supply, Characteristics, & Influencers; Evaluating and Enhancing Recruiter Performance
Service: U.S. Navy

- The authors examined the relationship between recruiter production (number of persons enlisted per district level unit; $N = 43$ districts) and seven environmental factors: (1) unemployment rate, (2) level of competition, (3) ratio of military/civilian pay, (4) ratio of military/total population in area, (5) ratio of DoD civilian employees/total population, (6) propensity to enlist, and (7) ratio of number of support people in district/total number of recruiters.
- The authors considered six additional environmental factors: (1) population density, (2) amount of suburban territory, (3) number of waiver applications per recruiter, (4) large military facility nearby, (5) co-located offices, and (6) mean income level in county, but data were not available for these factors.
- Significant correlations for military/civilian pay ratio (.36), the unemployment rate (.30), and propensity to enlist (.23) were found across the four quarters of FY1980 production.

- The seven environmental factors plus district membership accounted for only 12.4% of variance (5% and 7.4%, respectively) in individual recruiter production between districts.
- The authors noted that 87.6% of the variance in recruiter production was due to within district factors (e.g. between-recruiter differences in ability, management factors, or environmental factors at smaller geographical levels) and suggested that more fine-grained analyses may yield stronger relationships between environmental factors and productivity.
- This study also examined quality of recruit measures and found that the Freeman Point Index correlated highly with raw production and did little to change the rank order of recruiters from that based on raw production.
- The Abrahams' Quality Index (AQI) partialled out the number of accessions (i.e., quality) by dividing a recruiter's Freeman points earned in a given time period by the number of accessions for that same time period. The AQI had zero correlations with raw production and the Freeman Point Index, and was unreliable across months, thus failing to identify any stable tendency on the part of individual recruiters to bring in high (or low) quality recruits. The authors suggested exploring other quality measures.

Daula, T., & Smith, D. A. (1986). Recruiting goals, enlistment supply, and enlistments in the U.S. Army. In C. L. Gilroy (Ed.), *Army Manpower Economics* (pp. 101-126). Boulder, CO: Westview Press.

Model Category: Youth Supply, Characteristics, & Influencers
Service: U.S. Army

- The authors developed a method to estimate enlistment supply that incorporates recruiting goals and interservice and intraservice competition for recruits. Their modeling technique distinguishes between a supply-constrained (number of high-quality male enlistments are lower than the enlistment goals) and demand-constrained recruiting (the number of high-quality male enlistments are equal to or higher than the recruitment goals) environments.
- They examined how relative military compensation, socio-demographic factors (population of high quality recruits, race, and percent of the population who voted Republican), unemployment rate, enlistment competition (between services and intra-Army), number of recruiters, and advertising (general impressions of advertising and local advertising expenditures) influenced enlistment supply.
- The model was estimated using a time-series cross-sectional data set including monthly information from the Army's 56 recruiting districts from 1980 through 1983.
- The major determinant of enlistment supply was the unemployment rate. The authors concluded that the supply of high-quality enlistees was quite sensitive to changes in the civilian labor market. They also suggested that competition among services influences the number of high quality recruits available to the Army. They estimated that for every two additional youths recruited by the Air Force, Navy or Marines, the Army loses one recruit.

Goldberg, L., & Greenston, P. (1986). Economic analysis of Army enlistments: Policy implications. In C. L. Gilroy (Ed.), *Army Manpower Economics* (pp. 61-91). Boulder, CO: Westview Press.

Model Category: Youth Supply, Characteristics, & Influencers
Service: U.S. Army

- The authors used a time-series cross-section model to estimate Army enlistment supply for FY 1976-1983. Regression analyses were used to estimate the effects of several variables on the number of contracts signed for each service in 41 Navy Recruiting Districts.
- The variables included in the model were demographic factors (high school senior and graduate population, race, urban/rural population), recruiting resources (number of recruiters from each of the four services per population), policies (e.g., changes in Air Force and Marine Corps recruiting goals and standards), and economic factors. Economic variables included military pay (relative to civilian pay), civilian unemployment, and GI Bill benefits.
- The authors found that enlistments increased with relative military pay, cyclical unemployment, regional unemployment, total high school senior and graduate population, urban population, and the number of recruiters. Enlistments declined with increases in the Black population and with the loss of GI Bill benefits. The authors also examined the effects of these same variables within each of the DoD occupational area codes. The results were similar to the overall results reported above.
- The authors suggested that this methodology would provide the capability to estimate the enlistment supply and would yield valuable information on the impact of policies on enlistment supply.

Hostetler, D. L. (1998). *A statistical estimation of Navy enlistment supply models using zip code level data*. Unpublished master's thesis, Naval Postgraduate School, Monterey, CA. [AD A346 069]

Model Category: Youth Supply, Characteristics, & Influencers
Service: U.S. Navy

- Demographic data from FY1996 were used to model the number of NPS contracts written for the Navy at the zip code level from FY1995.
- Two linear regression models were tested. The first included as predictors the number of males of different races, county-level unemployment, dummy variables indicating whether or not the zip code encompassed a metropolitan area, and a recruiter share variable for 17-21 year-old males. The share variable was created by multiplying the number of recruiters assigned to a specific station by the ratio of the number of 17-21 year-old males in a given zip code to the total number of eligible males in all zip codes covered by the station.
- The second model included all of the variables in the first model plus the number of 17-21 year-old males enrolled in college, number of high school seniors scoring above the 50th percentile on the ASVAB, number of NPS contracts written for services other than the Navy, and a recruiter share variable for 22-29 year-old males. A total of 26,176 observations (zip codes) were used in the analyses.
- Although multicollinearity among the predictors was a problem, all of the predictors included in the first model were significant at the .01 level and the regression yielded an R^2 of .56. Similarly, all of the predictors in the second model were significant at the .01 level, with the exception of the number of males enrolled in college ($p < .05$) and county-level unemployment (n.s.). The R^2 for the second model was .68.
- The finding that the number of NPS contracts written for other services was predictive of the number of NPS Navy contracts is interesting and suggests that the services may

complement each other. However, it is also possible that this relationship was significant because the demographic variables related to Navy recruiting production were the same for other services.

Barnes, J., Dempsey, J., Knapp, D., Lerro, P., & Schroyer, C. (1991). *Summary of military manpower market research studies: A technical report* (FR-PRD-91-08). Alexandria, VA: Human Resources Research Organization. [AD A244 938]

Model Category: Youth Supply, Characteristics, & Influencers
Service: U.S. Armed Forces

- Two hundred twenty five market research studies conducted by the U.S. Armed Services from 1973-1988 were reviewed and their collective findings were integrated in this report.
- The reports were sorted by content into one of three categories: (1) understanding the market; (2) identifying the market; and (3) influencing the market.
- "Understanding the Market" research focused on propensity to enlist studies. Data from these surveys indicated that the youth most interested in military service are not the youth most desirable to the military (e.g., non-high school graduates, low grades, low AFQT scores).
- Additionally, the authors reported that propensity remained fairly stable over the 15 years, as did the relationship between propensity and enlistment behavior. Regarding advertising recall, television and magazines were most effective even though youth spend twice as much time listening to the radio as they do watching TV or reading magazines.
- "Identifying the Market" studies included economic research to forecast enlistment supply. In general, results from these studies showed good agreement regarding the directionality of elasticities (the percent change in enlistments for a one percent change in a variable) as predictors of supply; however there was less agreement regarding the size of the elasticities. According to the authors, the most valuable lessons to be learned from these studies were: (1) contracts, as opposed to accessions, are a better indicator of recruiter accomplishment; (2) at minimum, a model of enlistment supply should include unemployment, military and civilian pay, number of recruiters, and recruiting goals; and (3) data aggregated at lower levels provide more stable information over time.
- "Influencing the Market" included studies examining the impact of various advertising, bonuses, terms of service, and recruiter aide programs on enlistment. The effects of these programs were often tested in field experiments and most incentives were found to be effective at increasing enlistment.
- The authors concluded by presenting a brief list of recommendations for future research areas, and suggestions for the analytic and reporting processes (e.g., including enough information in the report so that the study could be replicated).

Dandeker, C., & Strachan, A. (1993). Soldier recruitment to the British Army: A spatial and social methodology for analysis and monitoring. *Armed Forces and Society*, 19(2), 279-290.

Model Category: Youth Supply, Characteristics, & Influencers
Service: British Army

- The social context of the British Army recruiting problems was reviewed, followed by a discussion on the use of spatial/geographical analysis to target recruiting strategies.
- One of the biggest potential problems for British recruiting was an anticipated 20% decline in youth between the ages of 15-29 from 1987 to 2003. Also, reductions in the size of the British military and uncertainty about the military's future role may deter youth from choosing a military career.
- Retention problems will also increase the need for new recruits. Finally, soldiers have traditionally been recruited from among high school dropouts, but more highly qualified youth will be needed because military technology is becoming more sophisticated.
- For illustrative purposes, data were compiled from 951 British Army applications submitted from a single county, mapped according to their home addresses.
- Results indicated that 63% of applications came from the main towns and the remaining 37% came from suburban and rural villages in the county.
- The majority of applicants were semiskilled or unskilled workers. Skilled workers were more likely to withdraw their applications, while unskilled workers and unemployed applicants were more likely to be rejected on educational or social grounds (e.g., criminal, drug, or drinking-related records).
- The spatial analysis allowed examination of clusters of applicants at the county, town, and neighborhood levels. This information may help suggest locations for recruiting offices.
- In sum, geographical analysis of applicant data may provide useful information to assist in the development of recruiting strategies.

McAllister, I. (1995). Schools, enlistment, and military values: The Australian Services Cadet Scheme. *Armed Forces and Society*, 22(1), 83-102.

Model Category: Youth Supply, Characteristics, & Influencers; Propensity
Service: Australian Defence Force

- The influence of school-based military training on the decision to enlist in the military was examined in a survey of 10,456 cadets in the Australian Services Cadet Scheme (ASCS).
- The ASCS has three components corresponding to the Australian Army, Navy, and Air Force. The Naval Reserve Cadets and Air Training Corps are fully supported by their corresponding service branch (i.e., instructors, training, and other resources are provided by the military) and membership is open to applicants living in the immediate area.
- In addition to fully supported units, the Army Cadet Corps has limited support units that generally do not offer as many activities. These units receive some support from the Army, but only on the condition of repayment. Membership in these support units is limited to school members and in some cases, membership is required for all students.
- Reasons for joining the ASCS were primarily vocational (e.g., "gain new skills," "learning more about the Defence Force," and "experiencing adventure and excitement") rather than social.
- Overall, 38.7% of cadets indicated they were "very likely" to join the military. However, more cadets in Navy, Air Force, and fully supported Army units indicated they were "very likely" to join (46%, 54%, and 47% respectively) than cadets in limited support and compulsory Army units (17% and 10%, respectively).

- These findings suggest that the ASCS is a fruitful source of recruits for the Australian military. However, limited support and compulsory service units actually harm recruiting by discouraging cadets.
- Finally, the cadet scheme is a cost-effective recruiting tool because cadets have higher recruitment and retention rates than youth in the general population, and the annual budget for the ASCS is one-quarter that of military advertising.

Youth Characteristics

Bachman, J. G., Freedman-Doan, P., Segal, D. R., & O'Malley, P. M. (in press). Distinctive military attitudes among U.S. enlistees, 1976-1997: Self-selection versus socialization. *Military Psychology*.

Model Category: Youth Supply, Characteristics, & Influencers
Service: U.S. Armed Forces

- The authors addressed three questions in this study: (1) how large are the differences in military attitudes between military personnel and civilians?; (2) have these differences changed in the last two decades?; and (3) to what extent are these differences attributable to pre-existing differences (self-selection) or to military service (socialization)?
- Data were obtained from the Monitoring the Future (MTF) Project, an annual survey of high school seniors with follow-up surveys of sub-samples two years after graduation. Samples were pooled into two groups, 1976-1985 and 1986-1995, and then categorized according to their post high school plans as military service-bound, college-bound, or civilian employed.
- The military attitudes assessed included beliefs about the influence of the military and military spending, perceived need for U.S. military supremacy, U.S. military interventions, and unquestioned obedience by servicemen.
- In general, high school seniors headed for military service reported more pro-military attitudes than their civilian counterparts. Their attitudes had changed little at follow-up and were relatively stable across the two decades, supporting the self-selection hypothesis.
- However, socialization effects were found with regard to unquestioned obedience of servicemen. As high school seniors, those bound for military service were more likely to agree with unquestioned obedience, but agreement decreased at follow-up after they joined the service.
- Pro-military attitudes did not differ between college-bound seniors and civilian employed seniors, but college-bound seniors reported a significant decrease in pro-military attitudes at follow-up after they entered college. Attitudes among the civilian employed did not change over time.
- Across all groups, pro-military attitudes were relatively stable across the two decades. There was, however, a small increase in the approval of the use of U.S. forces to protect the rights of other countries, and a decrease in preferences for military spending. However, preferences for military spending increased overall among the military-bound between the two decades.

Freedman-Doan, P., Bachman, J. G., & O'Malley, P. M. (1999). Is there a gap between soldiers and civilians? Comparing the political attitudes of young recruits with their non-service peers, 1976-1997 (Research Note 99-19). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Model Category: Youth Supply, Characteristics, & Influencers

Service: U.S. Army

- Data from the MTF project were used for this study. The size of the sample was not reported, although the mean number of individuals surveyed for MTF each year was 17,000 from 1976-1995.
- Compared to their non-college bound peers, men in the military were more interested in and trusting of government, more likely to be Republican, and more likely to plan to vote from 1986-1995. Men in the military were similar to their college-bound peers in these comparisons, however men in the military were less likely to be Republican than their college-bound peers.
- Other attitudes of men in the military were predictably different from their civilian peers. Military males were more supportive of military spending, of the supremacy of the US military over Russia/USSR, of the use of the military to protect the economy and to fight to protect the rights of other countries, and were not supportive of disarmament.

van Gelooven, R. (1998, November). *Soldiers' expectancies, implications for recruitment and job satisfaction*. Paper presented at the 40th Annual Conference of the International Military Testing Association, Pensacola, FL.

Model Category: Youth Supply, Characteristics, & Influencers

Service: Royal Netherlands Army

- The authors asserted that perceptions of soldier job characteristics on the part of prospects and new recruits are important to the prediction of enlistment propensity and subsequent job satisfaction among soldiers in the Royal Netherlands Army.
- Two surveys were conducted to identify perceptions/expectations about aspects of the soldier job among the general population and new recruits. An additional survey of active duty soldiers was conducted to determine which areas of their jobs did not meet their expectations and to evaluate their levels of job satisfaction and commitment.
- In general, civilian youth and new recruits expect the soldier job to be physically challenging, demanding, involve discipline and teamwork, and provide opportunities for education, training, and comradeship.
- Perceptions of the soldier job among civilian youth were predictive of attitudes toward military activities. Attitude towards military activities was in turn the best predictor of propensity.
- Among active duty soldiers, 28% indicated they had unmet expectations about their job. Specifically, soldiers were disappointed with the content of their work (e.g., not as much work, variety, physical challenges or excitement as they expected) and with organizational promises that were not kept.

- Unmet expectations were strongly related to job satisfaction, commitment, and intent to leave. These findings suggest that expectations about the soldier job are important for recruitment, soldier job satisfaction, and retention.

Weis, J. S., & Van Steenberg, A. J. (1997). *An assessment of the effects of changing family circumstances on the size and diversity of future military accessions*. Unpublished master's thesis, Naval Postgraduate School, Monterey, CA. [AD A331 223]

Model Category: Youth Supply, Characteristics, & Influencers
Service: U.S. Armed Forces

- Changes in educational attainment among American youth is an important issue for military recruiting because it has a direct impact on the quality of the population targeted for recruitment. Past research has suggested that demographic and socioeconomic variables are related to youth outcomes, such as education levels.
- Using data from two longitudinal studies of households, the Panel Study of Income Dynamics (PSID) and the Current Population Surveys (CPS), the authors employed a probit model to estimate the effects of family income, parental education levels, number of siblings, and family structure on high school graduation and college attendance.
- Data were available for youth from the same age groups in 1974/75 and 1993/94 (*N*s ranged from 18,914 to 22,174 each year).
- The probit model was developed on the 1974/75 groups and results indicated that children of wealthier, more educated parents, who live in smaller, intact families, had a greater probability of graduating from high school and attending college.
- Using the coefficients developed from the 1974/75 data set, the authors simulated high school graduation and college attendance rates for youth in the 1993/94 data set. Results indicated that the percentage of youth to graduate from high school would decrease by 8.8% compared to children assessed in 1974/75. This result is expected to be more pronounced for Blacks (15.3% decrease) and Hispanics (10.1% decrease), than Whites (4.8% decrease).
- Additionally, the percentage of White youth attending college is expected to increase by 2.9%, whereas the percentage of Black and Hispanic youth attending college is expected to decrease by 3.3% and 5.5%, respectively.
- These findings suggest that DoD will have greater difficulty recruiting high quality enlistees and officers in the future and may need to lower enlistment standards. The authors suggest that the military services may want to be proactive and sponsor or support programs that improve children's probability of educational success.

Jones, J. E., & Stigler, W. J. (1995). *Survey of minority officers in the Navy: Attitudes and opinions on recruiting and retention*. Unpublished master's thesis, Naval Postgraduate School, Monterey, CA. [AD A304 973]

Model Category: Youth Supply, Characteristics, & Influencers
Service: U.S. Navy

- Open-ended interviews were conducted with 100 minority (88 Blacks, 7 Asian/Pacific Islanders, and 5 Hispanics; 74 males, 26 females) Navy officers to assess their attitudes toward Navy service and the Navy's recruitment of minority officers.

- Participants' primary career decision influencers were their parents, and the main reasons given for joining the Navy were to obtain education and employment.
- Participants expressed concern over racial disparities in terms of recognition, rewards, and career advancement opportunities in the Navy, as well as overt racism. These issues could pose problems for the recruitment and retention of minorities.
- Black communities, especially churches and schools, have little awareness of the Navy. The author recommended increasing advertising in the Black media, emphasizing the opportunities available in the Navy, and expanding the NJROTC to high schools with a large minority student population.
- Expansion of the SEMINAR program, which sends minority officers to their hometowns to assist in recruiting, was also recommended.
- Although this report primarily addressed minority officer recruitment, some of the topics discussed may be useful for minority recruitment in general.

Friedland, J. E., & Little, R. D. (1984). Educational levels, aspirations, and expectations of military and civilian males, ages 18-22. *Armed Forces and Society*, 10(2), 211-228

Model Category: Youth Supply, Characteristics, & Influencers
Service: U.S. Army

- Based on data collected as part of the National Longitudinal Survey in 1979 ($N = 6,398$), the authors explored differences among White, Black, and Hispanic military and civilian males regarding their education levels, as well as their aspirations and expectations for attaining future education.
- Results indicated that White military males averaged fewer years of education than their civilian counterparts. In contrast, Black and Hispanic military males averaged more years of education than their civilian counterparts. These differences remained significant ($p < .01$) after males with college experience were excluded from the civilian sample.
- Military males, regardless of race, had higher aspirations and expectations of completing additional education than civilian males. In addition, military males were more likely to expect to be in school five years in the future. However, the authors noted that while this finding could indicate the seriousness of their intentions, it could also reflect the fact that individuals in the military are more likely to delay their education compared to civilians.
- A comparison of the three main service branches indicated that Army servicemen had lower education levels and aspirations than servicemen in the Navy, who in turn had lower education levels than servicemen in the Air Force.
- Because these results suggested that the military appeared to be attracting high quality individuals, as indicated by their educational aspirations and expectations, the authors felt that reinstituting the GI Bill would be of questionable utility for attracting high quality recruits, but would be more useful for increasing retention. However, these results are based on data that are 20 years old and the differences between military and civilian males on these variables have likely changed.

Benedict, M. E. (1987). *The 1986 ARI survey of U.S. Army recruits: Technical manual* (Technical Report 735). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A182 738]

Model Category: Youth Supply, Characteristics, & Influencers
Service: U.S. Army

- This is one of eight reports documenting the 1986 NRS. The NRS was designed to assess the attitudes, knowledge, personal characteristics, and enlistment motives of new Army recruits with the purpose of determining the most effective recruiting practices.
- The NRS was first conducted annually from 1982-1983 and twice a year beginning in 1983. The 1986 survey contained items from previous years, as well as new items regarding awareness and interest in ROTC, enlistment incentive programs, intentions to use the Army to obtain training and skills for future civilian employment, and opinions about new television programming.
- This volume describes the project background, instrument content and development, sample design, survey administration, database development, and documentation.

Recio, M. (1980). *A pilot study to ascertain the attitudes of Navy recruiters and Hispanic youth toward the recruitment of Hispanics in the U.S. Navy*. Arlington, VA: Temple University, Merit Center. [AD A093 061]

Model Category: Youth Supply, Characteristics, & Influencers
Service: U.S. Navy

- Two surveys were developed to identify issues related to the under-representation of Hispanics in the U.S. Navy. One was administered to 21 recruiters (16 Hispanic) and the other was administered to 30 Hispanic youth.
- Youth and recruiters believed that the main problems Hispanics have in meeting Navy entrance requirements were education and language. Additionally, awareness of Navy opportunities in Hispanic communities was low.
- Survey respondents favored the use of Hispanic and/or bilingual recruiters and advertising in Hispanic communities. In order to increase recruitment of Hispanic youth, recruiters also suggested greater involvement in Hispanic communities and recruiter visits to the homes of potential recruits to explain Navy opportunities.

Youth Influencers

Asch, B. J., & Hosek, J. R. (1999). *Military compensation: Trends and policy options*. Santa Monica: RAND National Defense Research Institute. [AD A364 082]

Model Category: Youth Supply, Characteristics, & Influencers
Service: U.S. Armed Forces

- This work examined trends in military pay in relation to comparable civilian pay and compared potential options for reducing the military-civilian pay gap and increasing productivity and retention in the services.
- Based on a lagged Employment Cost Index, the pay gap between military and civilian pay was estimated to be 7% as of 1999. According to the authors, the pay gap represents "the percentage differences in the increase of civilian pay since FY1982 relative to the increase in

(military) basic pay since that date." The "official" pay gap as tracked by the DoD was estimated to be 13.5%. However, this estimate did not account for differences within groups, such as age, education, occupation, gender and race/ethnicity.

- The authors re-calculated the pay gap for officers (who are generally college-educated) vs. enlisted military personnel (who are generally high school graduates). When comparing enlisted personnel with civilians of equivalent age, education, race, gender, and occupations, a positive pay gap was found from 1993-97; as basic pay grew 5-10% faster than civilian wages. However, a negative pay gap of between 3-17% existed for officers in comparison to similar civilian jobs from 1982-97.
- These results suggest the military will face problems with recruiting and retention, especially with regard to officers. Other factors that may negatively influence recruiting and retention were the reduced civilian unemployment rate, stepped-up peacetime operations, slowed or uncertain promotions, and eroded educational and retirement benefits.
- After examining several options for policy changes, the authors identified the following "Elements of Best Policy": (1) targeted pay raises for senior, higher grade personnel (2.5% is good, but 4% is better and would provide a greater incentive for better performance, especially because promotions are largely performance-based); (2) selective reenlistment bonuses for certain specialties (enhances retention in critical areas); (3) separation pay [allows for variable length careers. The current system provides generous benefits, but only after 20 years of service. This encourages career lengths that are either short (i.e., less than six years) for personnel who do not intend to stay until retirement, or 20 years in length, for personnel who want avoid a total loss of benefits if they leave after 10-19 years of service.]; (4) restructured recruiting resources (e.g., more cost effective recruiting policies than direct pay raises including increasing the Montgomery GI Bill, Army College Fund benefits, and other policies which target high-quality youth); and (5) a Thrift Savings Plan with no government contribution (allows for tax-sheltered savings for retirement).
- Finally, the authors reviewed the DoD Triad Proposal for FY2000. This proposal recommends a 4.4% across-the-board pay raise, higher raises for mid-grade personnel, increased retirement benefits from 40% to 50% of basic pay for 20 years of service, and a cost of living adjustment similar to the one given under the Federal Employees Retirement System. The proposal is expected to reward promotions over length of service, encouraging "fast-trackers." The authors predicted that these proposed changes should increase retention and productivity.

MacDonald, D. J. (1998). *Mainstreaming military compensation: Problems and prospects*. Unpublished master's thesis, Naval Postgraduate School, Monterey, CA. [AD A356 517]

Model Category: Youth Supply, Characteristics, & Influencers
Service: U. S. Armed Forces

- This work reviewed and compared military compensation and retirement programs to retirement options available for the civilian sector. The purpose was to identify and recommend changes to military programs to reduce overall costs for the DoD and enhance recruitment and retention.
- The military compensation structure (i.e., basic pay, quarters and subsistence allowances, bonuses and incentives, and tax related and other allowances) makes it difficult to accurately compare military and civilian compensation rates. Based on the Employment

Cost Index (ECI) used to measure civilian compensation, a cumulative pay gap (percentage difference between military and civilian pay growth) was determined to be 13%. Critics argue a more realistic index is the Defense Employment Cost Index (DECI) which measures pay growth for those civilian groups comparable to military personnel in age, race, education, gender, and occupation. A 1994 RAND analysis of compensation structures based on the DECI, suggested that actual pay gaps vary significantly by demographic and military group (e.g., high school graduate, junior enlisted, males have a positive pay differential of 7.3%; college level, senior officer, females earn 23.4% less than comparable civilians).

- The military retirement program is a non-contributory, defined benefit, lifetime annuity beginning after 20 years of service. Military personnel completing less than 20 years receive no retirement benefits. For service personnel enlisting after August 1, 1986, under the current program, (REDUX), retirees receive 40% of the average of their three highest years of basic pay, which increases 3.5% annually to a maximum of 75% after 30 years. This is a reduction in benefits from the two previous retirement programs that paid retirees either 50% of their final basic pay or 50% of the average of their three highest years of basic pay upon completion of 20 years of service.
- Civilian and public sector (e.g., Federal Employees Retirement System) retirement programs are typically more flexible and provide a wider variety of investment alternatives including: three and five year vesting options; combinations of defined benefit and defined contribution programs with tax advantages; employer matching contributions; and various stock, bond, and mutual fund investment choices.
- The author identified a number of problems with the current military retirement program. He argued, for example, the retirement system: (1) is costly relative to total dollars and in the loss of experienced personnel at an early age; (2) encourages the retention of underperforming personnel who have intermediate levels of tenure (e.g., between 8 and 15 years); (3) is unfair to those who complete more than one term of service but less than 20 years; (4) fails to recognize the variation in force management requirements across services, ranks, and occupational specialties; and (5) decreases and increases retention respectively for personnel with less than and more than 20 years of service.
- Military policymakers have increasingly used bonuses and incentives to recruit and retain personnel in targeted occupational specialties (e.g., medical technicians, nuclear propulsion specialists, computer specialists, etc.) This may undermine the fundamental military pay structure based on rank and tenure. Basic pay as a percentage of total military compensation has correspondingly declined. The recruiting gains realized in these incented groups may be offset by retention decrements across the board that result from a decrease in retirement benefits.
- The author proposed the following changes for the military compensation and retirement programs: (1) eliminating the special pay, bonuses, and incentives currently available for only select military occupations and groups; (2) increasing basic pay allowances that would subsequently increase retirement benefit payouts; and (3) instituting a defined contribution (e.g., Thrift Savings Plan) program with a matching provision.

Helms, R. O. (1993). *Military pay comparability* (Executive Research Project S101). Washington, DC: National Defense University, The Industrial College of the Armed Forces. [AD A276 610]

Model Category: Youth Supply, Characteristics, & Influencers
Service: U.S. Armed Forces

- Military compensation has been an important factor in the recruitment, retention, and motivation of individuals in the armed services since the beginning of the all-volunteer force.
- The author briefly reviewed federal reports and legislative changes regarding military compensation over the past 50 years, including changes related to how pay comparability is determined.
- The current pay system divides compensation into three categories: (1) Regular Military Compensation (included basic pay, subsistence allowance, housing allowance); (2) Special and Incentive pay (used to meet accession/retention needs); and (3) Supplemental and Institutional Benefits (included health care, leave, and retirement).
- Comparability is determined by linking military pay to civil service pay, which in turn is linked to the Employment Cost Index (ECI - includes government and private sector workers).
- The author criticized the prevailing system for: (1) assuming comparability at the beginning of the indexing period (every four years); (2) not measuring salaries of comparable skills in the workplace (i.e., some skills and jobs do not exist outside of the military); (3) being linked to civil service pay rather than private sector pay; and (4) allowing room for downward adjustments at the discretion of the President.
- After reviewing several alternatives, the author concluded that the existing system was the better choice and could be used to achieve comparability assuming several changes were made: (1) link military pay directly to the ECI; (2) eliminate the current pay shortfall; (3) allow for flexibility in applying larger increases to basic pay, housing allowance, or subsistence allowance rather than basic pay only; and (4) continue research to identify the best method for reaching comparability.

Dale, C., & Hill, L. G. (1984). *Military and civilian lifetime earnings comparisons* (Technical Report 619). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A148 844]

Model Category: Youth Supply, Characteristics, & Influencers
Service: U.S. Army

- From the abstract: "Life cycle earnings comparisons (were) made for several categories of Army personnel and civilians. The results show that as of the end of FY1982, many Army personnel are underpaid relative to civilians, especially in highly technical occupations. The results hold even when the analysis includes military housing allowances and commissary privileges, and tax advantages."

Kim, C. H. (1988). *Military compensation alternatives for retention of officers in the Republic of Korea Army*. Unpublished master's thesis, Naval Postgraduate School, Monterey, CA. [AD A200 624]

Model Category: Youth Supply, Characteristics, & Influencers
Service: Republic of Korea Army

- In the late 1980's, the Republic of Korea (ROK) Army faced a shortage of mid-grade officers. The ROK Army officer corps was made up of a compulsory group and a long-term service group, but over 80% of junior officers were leaving the Army after their compulsory term. According to the author, a major contributor to this problem was the fact that military wages lagged civilian wages.
- Two surveys were conducted to assess attitudes toward compensation policies. The first was administered by the ROK Army service-wide and included items regarding personnel management policies, compensation policies, and military life ($N = 862$ officers). The second survey addressed similar issues and was administered to 30 Korean students at the Naval Postgraduate School.
- Results from the first survey revealed that more than 63% of officers were dissatisfied with their compensation levels and nearly half of the officers were dissatisfied with the retirement system, retirement benefits, and promotional opportunities. Dissatisfaction with these issues was generally greater among higher-grade officers. Over 30% indicated they were satisfied with military life, however, while 26.2% were dissatisfied.
- Results from the student survey were similar to the officer's survey: 83% of respondents indicated dissatisfaction with their current compensation levels. Also, only 6.7% perceived their job security to be permanent.
- In addition to recommending increases in compensation levels, the author also recommended the ROK Army revisit its retirement policy that requires about 75% of officers to retire by the age of 43.

Schmitz, E. J. (1990). *The Army College Fund and military manpower: A review of existing research* (Technical Report 1572). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A229 049]

Model Category: Youth Supply, Characteristics, & Influencers
Service: U.S. Army

- The author reviewed relevant literature to determine the cost-effectiveness of the Army College Fund (ACF) and its effects on occupational choice, enlistment behavior, and retention.
- Econometric and survey research indicated that the ACF has increased enlistments among males eligible for the program. However, little or no research has been conducted regarding the occupational choice effects and retention effects of the ACF.
- The authors concluded that the ACF appears to be a cost-effective program.

McManus, T. M. (1994). *An initial analysis of the Navy's Sea College Program*. Unpublished masters thesis, Naval Postgraduate School, Monterey, CA. [AD A225 401]

Model Category: Youth Supply, Characteristics, & Influencers
Service: U.S. Navy

- The Navy's Sea College Program (SCP), active from April 1986 to December 1987 was an enlistment incentive program modeled after the Army College Fund. The SCP targeted

hard-to-fill general detail positions and required that recruits have a high school diploma and score in AFQT categories I or II.

- The purpose of this thesis was to determine whether the SCP had an impact on the number of high quality males entering the Navy. Data were available on non-prior service males, who enlisted in the Navy from FY1983-89, were between the ages of 17 and 22 years old, and scored above AFQT-V ($N = 22,309$). The data were analyzed across three separate time periods representing before, during, and after the SCP was available (periods I, II, and III), for three general detail positions (seamen, airmen, and firemen).
- Significant enlistment increases occurred when the SCP was available for each of the three positions. For seamen and airmen, mean recruit AFQT scores significantly increased ($p < .01$) when the SCP was available (period II). Mean airmen AFQT scores decreased significantly, however, after the SCP was discontinued (period III) when compared to period II ($p < .01$). Mean AFQT scores for seamen did not change significantly after the SCP ended.
- Additionally, ordinary least squares (OLS) and time series, cross-sectional regressions were conducted to predict the number of high quality contracts using the following predictors: (1) male population; (2) military-civilian pay ratio; (3) unemployment (3-month lag); (4) advertising expenditures (3-month lag); (5) high quality Black male population; and (6) the number of recruiters per district as a percent of the total male population. Dummy variables to indicate the availability of the Montgomery GI Bill and SCP were also included.
- Under the OLS regression, all predictors were significant except for the pay ratio variable. In the time-series model, all variables were significant except Black male population, but the SCP, pay, and advertising variables had negative coefficients.
- Although the author concluded that the SCP was reasonably successful at increasing enlistment rates, especially among high quality males, it is difficult to eliminate alternative explanations for the changes in enlistment rates and mean AFQT scores. For example, the standardized coefficients for unemployment, recruiters, and male population were greater than the standardized coefficient for SCP, and elasticities (the percent change in enlistments for a one percent change in a variable) for SCP only ranged from 0 to 0.071.

Brown, C. (1984). *Military enlistments: What can we learn from geographic variation* (Technical Report 620). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A165 663]

Model Category: Youth Supply, Characteristics, & Influencers
Service: U.S. Army

- A multiple regression, pooled cross-section/time-series model was used to determine the effects of pay, unemployment, educational benefits, and recruiting resources on the ratio of the number of contracts signed by male NPS Army enlistees to the enlistment-age population.
- For high-quality enlistees, military pay and the unemployment rate impacted the enlistment rate. Having more Army recruiters in an area increases enlistments while the presence of recruiters from other services decreases enlistments. Advertising effects were mixed, but mostly positive.
- For other types of recruits, the results for each predictor were mixed.

Pliske, R. M., Elig, T. M., & Johnson, R. M. (1986). *Towards an understanding of Army enlistment motivation patterns* (Research Report 702). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A173 817]

Model Category: Youth Supply, Characteristics, & Influencers
Service: U.S. Army

- A survey was conducted to determine the psychological and economic factors that affect enlistment motivation. The sample included 6,318 (NPS) regular Army recruits in 1982 and 8,605 RA recruits in 1983 (same data as Elig et al., 1984; p. 99) who were surveyed at Army reception stations across the country.
- A principal components analysis of the survey responses revealed six factors: Self-Improvement, Economic Advancement, Military Service (includes service to country, be a soldier, benefits), Time Out (includes escape personal problems and take time to decide future plans), Travel, and Education Money.
- Additional analyses indicated that the factors that affect enlistment motivation differ among demographic subgroups (gender, AFQT category, educational background, region of the country, and length of enlistment term).
- Females were more likely to cite Self-Improvement, Travel and Education Money, while males were more likely to cite Military Service and Time Out.
- Recruits with higher AFQT scores were more likely to mention Education Money, while recruits with lower AFQT scores were more likely to mention Time Out, Economic Advancement, and Self-Improvement.
- Regional differences were also found. Recruits from the Southeast were more likely to cite Economic Advancement and Military Service. Recruits from the Midwest were more likely to cite Travel and Economic Advancement. Recruits from the West were more likely to cite Self-Improvement and Travel and recruits from the Northeast were more likely to cite Travel.
- Recruits who weighted Education Money highly were more likely to sign for a 2-year term, while those who weighted Military Service highly were more likely to enlist for a 4-year term.

Fernandez, R. L. (1983). *Enlistment effects and policy implications of the Educational Assistance Test Program* (R-2935-MRAL). Santa Monica, CA: The Rand Corporation. [AD A126 084]

Model Category: Youth Supply, Characteristics, & Influencers
Service: U.S. Armed Forces

- In response to the poor recruiting outcomes witnessed under the Veterans Educational Assistance Program (VEAP), the Department of Defense (DoD) conducted the Educational Assistance Test Program for all U.S. forces on a national level. The program was a recruiting experiment conducted during FY1981 to test the enlistment effects of more generous educational benefit programs.
- The VEAP replaced the GI Bill, a noncontributory program with maximum benefits of \$13,140. Under the VEAP, participants made monthly contributions that were matched two-for-one by the Veterans Administration. VEAP funds were paid out to meet college or technical training expenses and had a \$8100 maximum benefit. It was suspected that the

contributory nature and reduced monetary benefit of the VEAP, in comparison to the GI Bill, contributed to its low participation levels.

- Four enlistment programs were tested: (1) *Control program*: basic VEAP, plus kickers (lump-sum bonuses) of up to \$6,000 for qualifying Army enlistees only; (2) *Ultra-VEAP*: identical to control except Army kickers increased to a maximum of \$12,000; (3) *Noncontributory VEAP*: DoD made all contributions, Army kickers up to \$6,000; and (4) *Tuition/Stipend Program*: qualified enlistees in all services received tuition assistance (\$1,200/year) plus subsistence allowance (\$300/month) for up to four years; benefits were indexed for inflation with the option to transfer benefits to dependents or cash out upon reenlistment. In every program except the Tuition/Stipend, the Army's maximum benefits were substantially larger than those offered by the other services.
- Four geographically dispersed test cells covering the entire continental U.S. were created. Each cell offered only one of the four enlistment programs. The cells were balanced regarding their geographical locations, local labor market conditions, and past enlistment rates. The control program was assigned to 51% of the country, and the three test programs were offered in 19%, 15%, and 15% of the country respectively.
- The Ultra-VEAP program yielded enlistment rates 9.1% and 9.8% above that of the control program for the Army and Navy, respectively. However, the rates for the Army were compared to a control which also included lump-sum bonuses, whereas the Navy's control did not.
- The Noncontributory VEAP resulted in significantly higher enlistment rates for the Air Force only (5.5% higher than the control). Both the Navy and Air Force had higher enlistment rates than the control group under the Tuition/Stipend program (10.5% and 7.8%, respectively). However, the Army's enlistment rates under the Tuition/Stipend program were significantly lower (5.7%) than the control group's rates. This may have resulted from the fact that the maximum benefits available under the Tuition/Stipend plan were equal across all services, whereas the Army offered lump-sum bonuses under the other three plans. Therefore, the Army may have lost its competitive advantage under this plan, resulting in lower enlistment rates.
- The authors suspected that high quality enlistees attracted by educational benefits may prefer the Air Force or Navy over the Army, which is perceived to offer jobs primarily in combat arms. Results from the Tuition/Stipend program support this, and further analyses indicated that enlistment gains in Army skilled positions came at the expense of enlistments in combat arms. That is, although educational benefits may have encouraged more youth to enlist in the Army, they were more likely to choose a non-combat over a combat job.
- In conclusion, the authors stated that more generous programs do increase enlistment rates of high quality individuals. The contributory requirement of a program does not appear to reduce enlistments, but does reduce program costs. Additionally, programs targeted toward hard-to-fill specialties appear to be effective and economical. The special problems faced by the Army however, bear consideration in policy development.

Palomba, C. A. (1983). *U.S. Marine Corps Enlistment Bonus Program* (CNR 34). Alexandria, VA: Center for Naval Analysis. [AD A130 596]

Model Category: Youth Supply, Characteristics, & Influencers
Service: U.S. Marine Corps

- The U.S. Marine Corps (USMC) Enlistment Bonus Program (EBP) was examined to determine how well it increased the flow of high quality recruits into the USMC, placed quality recruits in hard to fill MOSs, attracted a diverse population of recruits, and reduced attrition. The EBP's cost-effectiveness was also investigated.
- The EBP offered two types of bonuses, one for technical positions (TB) and one for combat arms (CB). Each required four years of service, whereas 35% of all USMC recruits enlist for three-year service terms.
- The author analyzed two data sources to estimate gains in manpower due to the EBP, the 1979 DoD Survey of Personnel Entering Military Service ($N = 937$ USMC recruits), and FY1979 data from the USMC financial center.
- Results indicated the \$1500 TB and \$2500 CB resulted in 5% and 10% gains in manpower, respectively, and together produced a 30% gain for specific MOSs.
- Cost-effectiveness analyses suggested a \$3000 TB and CB would be more cost-effective than the GI Bill, but less cost-effective than adding recruiters or advertising would.
- Recruits receiving the TB and CB were compared to those in similar MOSs to assess the programs' impact on recruit quality. In general, TB and CB recruits were of higher quality than non-bonus recruits based on AFQT scores and the number of high school graduates.
- With regard to affirmative action, the TB was more likely to attract females and Blacks, but less likely to attract Hispanics than other enlistment programs, whereas the CB was less likely to attract Blacks than other enlistment programs. However, females in TB and Blacks in CB were more likely to leave the service early than males and Whites in the same program.
- The authors suggested that because only 30% of recruits who qualified for the TB actually participated, the USMC should consider increasing the quota for TB to gain an additional year of service from these recruits.

Dale, C., & Gilroy, C. (1985a). Determinants of enlistments: A macroeconomic time-series view. *Armed Forces and Society*, 10(2), 192-210.

Model Category: Youth Supply, Characteristics, & Influencers
Service: U.S. Army

- The authors explored the usefulness of economic (unemployment rate, ratio of military to civilian pay with a four-month lead, enlistment bonuses, and educational benefits) and non-economic factors (number of recruiters and recruiter effort) in predicting Army enlistments. Enlistments reflected the number of contracts signed monthly - accessions plus DEP contracts. Monthly contract and accession data from October 1975 to September 1982 were used.
- Results indicated that the unemployment rate and ratio of military to civilian pay had the strongest impact on enlistment rates.
- Although the actual number of recruiters did not significantly influence enlistment, recruiter effort, as indicated by a binary variable representing a period of special recruiting policies targeted toward high school graduates, was significant. However, the findings for number of recruiters may have been negative as a result of a 1978 Army policy that required more recruiters to be assigned to areas with low enlistment rates.

- Educational benefits, such as the GI Bill and the VEAP, had a significant effect on enlistment rates of males of a higher mental category (CAT I-III A on the AFQT). Enlistment bonuses for enlistees who enter critical specialties in combat arms also had a significant impact for this group.

Dale, C., & Gilroy, C. (1985b). Enlistments in the all-volunteer force. *American Economic Review* 75(3), 547-551.

Model Category: Youth Supply, Characteristics, & Influencers
Service: U.S. Army

- The usefulness of two different criteria, the number of contracts (applications to enlist) signed per month and the number of accessions (number of recruits who begin their enlistment period) per month were compared in modeling the effects of several economic factors on the enlistment decision. Monthly contract and accession data from October 1975 to September 1982 were used.
- The authors believed the contract criterion would be more useful because accessions data demonstrate strong seasonality, as recruits may sign an enlistment contract at any time during the school year but report for duty (access) predominantly in the summer.
- The variables included in the regression were the unemployment rate, the ratio of military to civilian pay, three variables to measure the different educational benefits available over the course of the study (e.g., GI Bill, VEAP), recruiter effort (a binary variable representing November 1979 to August 1981, a period of special recruiting policies targeted toward high school graduates and the remaining time periods, October 1975 - October 1979 and September 1981 - September 1982), and a seasonal dummy variable.
- Two regressions per criterion were performed, one using a one-month lagged (i.e., data from one month previous) term for the wage ratio variable, and one using a four-month lead term (i.e., data from four months ahead).
- Results indicated that overall, the contracts criterion produced better results than the accessions criterion and the leading wage term produced better results than the lagged wage term.
- The regression using the four-month lead term and the contracts criterion produced the best results ($R^2 = .81$). All predictors in this equation were significant ($p < .05$).

Horne, D. K. (1984). *An economic analysis of Army enlistment supply* (MPPRG Report 84-5). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A176 201]

Model Category: Youth Supply, Characteristics, & Influencers
Service: U.S. Army

- The authors used multiple regression to forecast the number of high quality males available in the future by assessing the impact of several economic variables on quarterly enlistment, as indicated by the number of contracts signed from FY1977 to FY1984.
- Results suggested that unemployment rate, military pay rate, ratio of number of recruiters to number of eligible 16-21 year old males, national advertising expenditures, and educational benefits all had significant effects on the number of contracts signed.

Morey, R. C. (1982). *The tactical allocation of quality recruiting goals across regions and districts: Its use in identifying "exceptional" producers* (ONR-200-5). Durham, NC: Duke University, Fuque School of Business, Center for Applied Business Research. [AD A114 008]

Model Category: Youth Supply, Characteristics, & Influencers

Service: U.S. Navy

- The author proposed a multivariate regression model to predict the number of high quality enlistment contracts to be expected from each of the six regions comprising the Naval Recruiting Command. The overall purpose of this effort was to allow an efficient and fair allocation of the national recruiting quotas and resources.
- A non-linear, time-series predictor model was built using 14 factors including demographic data, advertising dollars and coverage, comparative pay rates, propensity to enlist, and the number of recruiters for each of the 43 districts. Data were compiled from the districts for a three-year period (1976-1978) and validated against the actual number of high school graduate (HSG) contracts obtained in 1979-1980. The number of recruiter man-months, HSG supply, local unemployment rates, and district propensity rates played the greatest role in predicting enlistment contracts.

Donelan, J. O. (1977). *Investigation of goaling models for Navy recruiting*. Unpublished master's thesis, Naval Postgraduate School, Monterey, CA. [AD A039 650]

Model Category: Youth Supply, Characteristics, & Influencers

Service: U.S. Navy

- Goaling models for Navy recruiting are essentially statistical models, such as a linear regression, that are used to assist the Navy in establishing recruiting goals or quotas for its Recruiting Districts. These models may include measures of economic conditions, number of recruiters, number of QMA, density of market, geographic location, and demographic information to predict accessions.
- The author reviewed past Navy goaling research and then developed and compared the results of several models to identify the most important variables to predict accessions.
- Several models were tested including four multi-linear models, a quadratic model, and three logit models. The criterion in each model was the total number of accessions from the top two mental groups (MG-I and MG-II) based on AFQT scores, for each of the 43 Navy Recruiting Districts, from FY1975.
- The variables included in the models were local unemployment, number of recruiting stations, number of QMA per square mile in each district, urban and rural QMA, number of Black QMA (MG-III only), and a canvasser factor, which is a subjective number used to indicate a recruiter's effectiveness at different periods of time. For example, a recruiter is considered 0% effective during the first month of duty, 28% effective from one to three months of duty, 70% from four to six months, 90% from seven to twelve months, and 100% after one year of recruiting duty.
- The total R^2 reported for each model ranged from .83 in a model that used a logit function, to .98 for a stepwise regression with no interaction terms and a zero-intercept. The four most important variables across models were the canvasser factor (most important),

unemployment rate, urban QMA, and Black QMA (negative weight). The author speculates that time spent recruiting minorities may detract from time spent recruiting more easily accessible White MG-I and MG-II applicants.

- Based on these findings, the author recommended longer recruiting assignments and selection and training to improve recruiter quality to capitalize on the important role recruiters play in gaining accessions.

Propensity

Lawrence, G. H., & Legree, P. J. (1996). *Military Enlistment Propensity: A review of recent literature* (ARI Research Note 96-69). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A319 605]

Model Category: Propensity

Service: U.S. Army

- A review of enlistment research found that the majority of studies typically identified four or five motivational factors: (1) personal character and strength, (2) step back from life, gain new perspective, (3) pragmatic - view service as means to an end (e.g., money for college, training, etc.), (4) desire to serve others, and (5) escape from problems, usually environmental or economic.
- The primary decision influencers were parents, especially fathers. Friends and relatives associated with the military were also frequently mentioned.
- Direct influencers of the enlistment decision included financial inducements (pay, bonuses), educational benefits (ACF), unit assignment, and career commitments. The authors note that USAREC often has little control over these factors.
- Indirect influencers of the enlistment decision included patriotic appeals, coming-of-age, comradeship, self-worth, quest and adventure, and escape from boredom or problems. The authors state that the Army has more control over these factors, particularly through advertising.

Freedman-Doan, P., & Bachman, J. G. (1999). *Analysis of linkages between military enlistment plans and behaviors* (Research Note 99-12). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A359 848]

Model Category: Propensity; Enlistment Decision

Service: U.S. Army

- This report summarizes the findings of analyses done on data collected for the MTF project. All of the MTF reports generated were reviewed with the following major findings:
- There is a strong relationship between propensity and enlistment. Specific results were not referenced.
- Individuals who expect to enlist, and actually do enlist, are not planning to complete college, view the military as an attractive work environment, and tend to be qualified regarding educational or behavioral military enlistment standards.
- Enlistment propensity has declined throughout the 1990s, primarily as a result of a decline in propensity among African-Americans.
- Changes in armed forces policy regarding illicit drug use coincided with a sharp decline in reported drug use among new recruits (no note on when the policy was instituted).
- The authors noted that attempts were made to shed light on the problem of early attrition among new recruits. However, the data were not able to reliably identify individuals who left military service early.

Bachman, J. G., Segal, D. R., Freedman-Doan, P., & O'Malley, P. M. (1998a). Does enlistment propensity predict accession? High school seniors' plans and subsequent behavior. *Armed Forces and Society*, 25(1), 59-80.

Model Category: Propensity; Enlistment Decision

Service: U.S. Army

- This study was based on data collected as part of the MTF Project.
- The authors found gender differences in the relationship between enlistment propensity and enlistment behavior. Specifically, 70% of male high school seniors who reported they "definitely" intended to serve in the armed forces, did serve within five to six years after finishing high school, compared to 29% of those who indicated they "probably" would serve. For women, only 40% who "definitely" intended to serve and 8% of those who indicated they "probably" would serve actually did serve.
- In contrast, 80% of males and 83% of females who reported they "definitely" intended to go to college had done so five to six years after high school.

Bachman, J. G., Segal, D. R., Freedman-Doan, P., & O'Malley, P. M. (1998b). *Military propensity and enlistments: Cross-sectional and panel analyses of correlates and predictors*. Monitoring the Future Occasional Paper Series 41, Ann Arbor, MI: University of Michigan, Institute for Social Research.

Model Category: Propensity; Enlistment Decision

Service: U.S. Army

- MTF data was analyzed to identify correlates of propensity.
- Consistent with other studies, the authors reported higher enlistment rates among African-Americans compared to their percentages in the youth market.
- Propensity was higher among high school seniors who did not live with either parent or those who had less educated parents. Propensity was lowest among seniors expecting to complete college.
- High school seniors whose parents had a higher education level had the lowest propensity and enlistment rates, probably due to their education plans (e.g., they were more likely to expect to attend college).
- Although enlistment propensity was highest for seniors who had the lowest grades in high school and whose parents had the lowest education levels, they also had the lowest enlistment rates, possibly because many could not meet military aptitude test score requirements.
- Seniors with higher propensity reported more pro-military attitudes (e.g., regarding military spending, effectiveness of the military), saw military work as attractive, and perceived greater job opportunities and experiences from military service.
- Substance use was also explored. The authors reported a small positive relationship between smoking and propensity, and no relationship between alcohol and marijuana use and propensity.
- Results also suggested that individuals who engage in more physical activity and aggressive behavior had slightly higher propensity to enlist.

Segal, M. W., Segal, D. R., Bachman, J. G., Freedman-Doan, P., & O'Malley, P. M. (1998). Gender and the propensity to enlist in the U.S. Military. *Gender Issues*, 64-87.

Model Category: Propensity

Service: U.S. Army

- Using data from the MTF project, the authors explored gender differences in attitudes toward the military and in the relationships among propensity, enlistment behavior, and demographic variables.
- Their results indicated that more females desire to enlist (8-9%) than expect to enlist (5-6%), whereas males expect and desire to serve at a more equal rate (17-20% expect to serve and 16-19% desire to serve). The authors suggested that the Army may benefit from recruiting efforts directed at females.
- This research also explored the effects of background characteristics and educational achievement on the enlistment decision of males and females, but the effect sizes for these variables were low.

Bachman, J. G., Segal, D. R., Freedman-Doan, P., & O'Malley, P. M. (in press). *Who chooses military service? Correlates of propensity and enlistment in the United States Armed Forces*. Unpublished paper. Institute for Social Research, University of Michigan.

Model Category: Propensity

Service: U.S. Army

- Using data from the MTF project, variables that relate to enlistment propensity and enlistment behavior were explored.
- The relationship between propensity and actual enlistment differed for men ($\eta^2 = .57$) and women ($\eta^2 = .38$).
- Enlistment rates were lower for individuals with college-educated parents, high grades, and college plans. Males, African-Americans, Hispanics and individuals that view military work as attractive had higher enlistment rates.

Segal, D. R., Bachman, J. G., Freedman-Doan, P., & O'Malley, P. M. (in press). Propensity to serve in the US Military: Temporal trends and subgroup differences. *Armed Forces and Society*.

Model Category: Propensity

Service: U.S. Army

- Trends in propensity to enlist among 8th, 10th, and 12th grade students were examined based on the MTF project data collected from 1975 to 1997 (data for 8th and 10th grade students were only collected after 1990). The sample sizes ranged from 14,832-18,906 per year.
- In general, trends indicated an increase in students who reported they *definitely would not* serve in the armed forces from 1976 to 1996.

- Most results reported echo those of other MTF studies. For example, the authors noted that women were more likely to desire to serve than expect to serve and propensity among African-American males dropped considerably after 1990 (propensity was approximately 48% until 1990 but has remained below 30% since that time). Lower propensity was also reported among students with college plans when compared to those without college plans.

Orvis, B. R., Gahart, M. T., & Ludwig, A. K. (1992). *Validity and usefulness of enlistment intention information* (92-17157). Santa Monica, CA: RAND National Defense Research Institute. [AD A252 738]

Model Category: Propensity
Service: U.S. Armed Forces

- The validity of enlistment intention (propensity) data was examined in this study using YATS data from FY1975-85, a RAND database of regional demographic and economic information from FY1976-83, a 1981 survey of military applicants, and a 1981 national advertising survey.
- Youth indicators of their likelihood of serving in the military (a four-point scale ranging from "definitely will serve" to "definitely will not serve") were combined with their response to an open-ended question asking them what their plans are in the next few years, to form the intention measure. Responses yielded three possible categories: (1) positive intent with unaided mention; (2) positive intent with aided mention; and (3) negative intention.
- Overall, the data indicated that enlistment intention was strongly related to actual enlistment behavior. Among youth indicating positive intent with unaided mention in the 1976-1980 YATS ($N = 33,809$), 55% took the ASVAB by March 1984 and 33% enlisted by March 1984. Among youth with a negative intention, 12% had been tested and 6% enlisted by March 1984.
- Moreover, the relationship between intention and enlistment remained significant after youth background characteristics (e.g., race, age, education, etc.) were statistically controlled, indicating that intentions provided incremental validity over demographic information.
- Attrition was lower for individuals who had originally expressed positive intent when compared to those with an initial negative intent.
- Other analyses revealed that the relationship between intent and enlistment was strongest when overall enlistment was high, the decision to enlist was near-term, and constraints on the demand for recruits were low. Intentions to serve in a specific service (e.g., Army, Navy) predicted enlistment more accurately than general intentions.
- Finally, individuals with a negative intention made up nearly half of all enlistees. Data from 1976-80 ($N = 33,809$) indicated that although youth with negative intentions comprised 72% of the population, they represented 46% of enlistees. Youth with positive intent and unaided mention comprised 8% of the population, but 18% of enlistees. Therefore, small percentage gains in this group would result in large enlistment gains overall. This suggests that it is important to study youth with negative intentions.

Wilson, M. J., & Lehnus, J. (1996, November). *The future plans and behaviors of YATS youth*. Paper presented at the 38th Annual Conference of the International Military Testing Association, San Antonio, TX.

Model Category: Propensity
Service: U.S. Armed Forces

- Using data from the 1991-1993 YATS, the authors examined respondents' future plans against their actual behavior, one year later.
- Results indicated that in general, youth plans are predictive of their future behaviors. For example, 53% of high school seniors who expected to be full time students in college, junior college, or vocational school actually were full time students, one year later. Results also indicated that propensity and education intentions are inversely related.
- Finally, the data suggested that enlistment propensity in young men changes from age 16 to 22 most frequently, it decreases.

Wilson, M. J., Greenlees, J. B., Hagerty, T., & Hintze, D. W. (1998). *Youth Attitude Tracking Study 1997: Propensity and advertising report* (98-011). Arlington, VA: Defense Manpower Data Center. [AD A354 182]

Model Category: Propensity
Service: U.S. Armed Forces

- Findings from the 1997 YATS are presented in this report ($N = 10,163$ non-prior service 16-24 year olds).
- In general, propensity rates have declined since 1992 with 21.2% of males and 8.9% of females indicating positive propensity. Propensity was negatively related to age and education level and was higher among Blacks (32.3%) and Hispanics (33.8%) than among Whites (15.7%).
- Advertising awareness has been stable since 1997. Military advertising was recalled by 87.4% of males and 86.7% of females. As in previous studies, Army advertising had the highest recall, followed by the Marine Corps, Navy, and Air Force.
- No gender differences for advertising awareness were found. However, advertising awareness was higher among Whites, youth that had contact with a recruiter, and youth with higher education levels.
- The Army's "Be All You Can Be" was the most recognized slogan among males (92%). This was a significant increase over 1994-1996 recognition levels (89-90%). "Aim High. Air Force." and "The Few. The Proud. The Marines" also had high recognition levels (76% each).
- Media and Internet habits were also reported [see Hintz and Lehnus (1998) for greater detail].

Wilson, M. J., Berkowitz, S., & Lehnus, J. (1996, November). *The meanings of propensity: Perspectives from in-depth interviews*. Paper presented at the 38th Annual Conference of the International Military Testing Association, San Antonio, TX.

Model Category: Propensity
Service: U.S. Armed Forces

- In-depth interviews were conducted with 120, 17-21 year-old male YATS respondents in 1995 and 1996. Based on their responses, the youth were categorized into four propensity groups, "joiners," "non-joiners," "shifters," and "fence-sitters."
- Shifters and fence-sitters both viewed recruiters with mistrust. The majority of youth reported that recruiters did not materially influence their enlistment decision.
- The authors concluded that "propensity to enlist" is not stable, but is a "dynamic concept constantly changing in response to personal and external conditions." Positive propensity may refer to feelings of indecision about what career path to take or to an immediate readiness, willingness, and desire to enlist.

Lehnus, J., & Lancaster, A. (1996, November). *Declining interest in military service: Quantitative observations*. Paper presented at the 38th Annual Conference of the International Military Testing Association, San Antonio, TX.

Model Category: Propensity
Service: U.S. Armed Forces

- The authors briefly reported on youth responses to YATS questions regarding their reasons for not enlisting, the influence of recent military activity (e.g., Desert Storm, Haiti, Somalia) on enlistment propensity, and college plans.
- In general, youth had negative perceptions about military lifestyle and bootcamp, were less likely to enlist because of recent military operations, and perceived military service as inconsistent with pursuing college goals.

Giambo, P. (1996, November). *The Youth Attitude Tacking Study in-depth interviews: Youth knowledge about military life*. Paper presented at the 38th Annual Conference of the International Military Testing Association, San Antonio, TX.

Model Category: Propensity
Service: U.S. Armed Forces

- Participants in the 1996 YATS In-Depth Follow-up Interview were asked open-ended questions to assess their knowledge about various aspects of military service including active vs. reserve duty, military earnings, job benefits, and the jobs and training available in the military.
- Overall, the authors report that youth lack specific accurate information about the military. However, those who indicated unaided positive propensity were more knowledgeable than individuals with the lowest propensity.

O'Connor Boes, J., Wiskoff, M. F., & Flacks, M. (1999). *Hispanic youth and military enlistment propensity*. Monterey, CA: Defense Security Service, Security Research Center. [AD A362 976]

Model Category: Propensity; Youth Supply, Characteristics & Influencers
Service: U.S. Armed Forces

- The authors attempted to isolate the factors leading to the recent declining trend in the propensity for Hispanic youth to enlist in military service. Primary qualitative data were collected through interviews with "key Hispanic informants" ($N = 16$) and military recruiting officials, and this information was combined with quantitative data gathered from diverse secondary sources (e.g., Census data, DoD, YATS).
- Hispanic youth, particularly Mexican Americans, make up an increasingly larger percentage of the targeted military recruiting market; the Hispanic population is growing five times faster than the general population. Although Hispanics also make up an increasing percentage of all military accessions (particularly within the Marines), as a group they have shown a declining propensity for military service since the early 1990s.
- Hispanic community leaders suggested that educational and economic success among segments of this market have reduced the military's attraction. They recommended that the military focus on the Hispanic sense of community and provide positive military role models to improve enlistment success.
- The Marines attributed their Latino recruiting success to three major factors. Specifically, Marine recruiters: (1) actively prescreen potential recruits' ability and motivation levels prior to the enlistment process; (2) focus on individual needs and an inclusionary sense of esprit de corps; and (3) involve parents and friends in the enlistment process.
- The authors suggested that all branches should adopt these best practices, encouraged outreach activities within the Hispanic community and proposed more sophisticated identification and tracking processes for Hispanics in research involving military recruiting.

Drillings, M., & Fischl, M. A. (1999). *Predicting enlistment propensity of young African-Americans*. Washington, DC: University of the District of Columbia, Scientific Parallel Processing Applied Research Center. [AD A372 543]

Model Category: Propensity
Service: U.S. Army

- African-American high school students ($N = 460$) aged 17-19 from three schools in the District of Columbia were individually interviewed to measure enlistment propensity. Respondents were placed in one of three categories: Unaided Propensity-1 (military was first career choice), Unaided Propensity-2 (military was second choice if first choice did not work out), and Aided Propensity (would consider joining the military, after the interviewer described the many benefits offered by the military).
- Three binary dependent variables reflecting enlistment propensity were created using these categories (e.g., for Unaided Propensity-1, persons who said the military was their first choice versus persons who did *not* consider it a first choice). The authors attempted to model each type of enlistment propensity using logistic regression.
- Educational benefits during and after service were important predictors of positive propensity for all three dichotomous criteria. The authors also noted that the presence of a "well functioning" ROTC program in a high school positively influenced propensity.
- A variable referred to as "latent goodwill" (which reflected individuals who did not verbalize negative reasons for *not* joining, such as racial discrimination) was also found to be important for enlistment propensity.
- Individuals of low socio-economic status were most likely to demonstrate positive propensity.

Hughes, A. O., & Khatri, D. S. (1996). *Exploratory research on African-American youth's propensity to join the military* (ARI Research Note 96-12). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A307 050]

Model Category: Propensity

Service: U.S. Army

- One hundred African-American juniors and seniors (not randomly selected) from a Washington, DC high school were interviewed by either a male or female African-American adult nominated as well known and liked by the students, to identify factors that affected their interest in the military.
- Results indicated that 75 of the students planned to attend college or technical school after high school and only nine intended to join the military or ROTC. However, those nine students cited educational benefits as one of their principal reasons for joining.
- Members of the sample mentioned none of the suspected reasons for low propensity (racial discrimination, fear of the unknown, diminished educational benefits).
- However, these results should be viewed cautiously, as the students were chosen by the interviewers and none of the students refused to participate. The authors also suspected the students may have been giving socially acceptable answers.

Lancaster, A. R., & Lehnus, J. (1996, November). *Declining interest in military service: Qualitative insights*. Paper presented at the 38th Annual Conference of the International Military Testing Association, San Antonio, TX.

Model Category: Propensity

Service: U.S. Armed Forces

- The authors conducted 26 focus groups with male youth and 12 focus groups with parents to determine why youth propensity to enlist has declined since 1991.
- The youth samples consisted of White and Black high school seniors and recent high school graduates who were not in the DEP or previously in the military.
- Although the authors found no single definitive explanation for the decline in propensity, they uncovered several insights into youth and parent perceptions of military service.
- For example, both parents and youth were aware of opportunities in the military, but believed that recruiters and military advertising gave unrealistic and inaccurate information about military service.
- Most youth planned to go to college and were aware of the educational benefits available through the military, but felt that the time commitment (4+ years) and demands of service (e.g., humiliation in boot camp, taking orders, potential danger) far outweighed the benefits. Military service was also seen as incompatible with higher education goals.
- Parents and some youth believed military service is good for those who are confused about their future, need discipline, and have no alternative means for funding their education. However, they were also skeptical about the new role of the U.S. military in international peacekeeping and other missions that are not directly related to the national interest.

Achatz, M. (1998, November). Understanding women's propensity: Perspectives from in-depth interviews. In D. McCormick (Chair), *Current Findings from the 1997 Youth Attitude Tracking Study (YATS)*. Symposium conducted at the 40th Annual Conference of the International Military Testing Association, Pensacola, FL.

Perry, S., & Lehnus, J. (1998, November). The Youth Attitude Tracking Study (YATS) in-depth interviews with young women: A methodological overview. In D. McCormick (Chair), *Current Findings from the 1997 Youth Attitude Tracking Study (YATS)*. Symposium conducted at the 40th Annual Conference of the International Military Testing Association, Pensacola, FL.

Model Category: Propensity
Service: U.S. Armed Forces

- These two papers are reviewed together.
- Ninety-six in-depth telephone interviews were conducted with 16-24 year-old female YATS respondents in order to gain a clearer understanding of female enlistment propensity and career decision-making.
- Based on YATS responses, respondents were categorized into four propensity groups, "joiners," "non-joiners," "shifters," and "fence-sitters."
- Joiners were described as having strong family ties to the military, being goal-oriented, motivated by the military's education and training benefits, and likely to believe that gender discrimination is greater in the civilian workforce than in the military. Non-joiners were likely to come from families that stress higher education, are goal-oriented, and do not feel the military is a viable option.
- A large number of shifters no longer considered joining the military because they had formed families or expected to in the near future and had a negative perception of the way women are treated in the military. Fence-sitters wanted to pursue higher education, but lacked the financial resources to do so and were less likely to know anyone who has served in the military or to have contact with recruiters.
- When asked what the military could do to make service more attractive to women, many suggested providing more information on women's roles in the military, opportunities available to women, and using more female recruiters.

Enlistment Decision

Legree, P. J., Gade, P. A., Martin, D. E., Fischl, M. A., Wilson, M. J., Nieva, V. F., McCloy, R., & Laurence, J. (2000). Military enlistment and family dynamics: Youth and parental perspectives. *Military Psychology*.

Model Category: Enlistment Decision
Service: U.S. Army

- The purpose of this study was to identify directions for military advertising initiatives and to understand parental influences on their children's career decisions.
- Data from the ACOMS survey ($N = 2,731$ parent-son pairs) were used to estimate the impact that youth perceptions of parental attitudes toward military service and parent reports of their own attitudes towards service have on enlistment propensity and enlistment behavior.
- Correlations between youths' perception of parental attitudes toward the military and reported parental attitudes were low, suggesting that youth perceptions of parental attitudes should not be used as a proxy for parental attitudes.
- Additionally, youth perceptions of parental attitudes toward military service more strongly predicted enlistment *propensity*, while parental attitudes predicted enlistment *behavior*.

Wilson, M. J., & Perry, M. S. (1988). *The career decision survey: Modeling the Army enlistment decision* (Research Report 814). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A203 870]

Model Category: Enlistment Decision; Propensity
Service: U.S. Army

- The authors found support for Fishbein and Ajzen's theory of reasoned action in modeling the enlistment decision.
- The Career Decision Survey, administered to a sample of 17-20 year old youth, was designed to measure beliefs and evaluations of career choice outcomes, affective reactions to career choice attributes, social norms (parents and peers) and motivation to comply with those norms, social influences on career choice (what important others think I should do), and career intentions (Army, college, or job).
- Although the sample was large ($N = 1,046$), it was not representative of youth nationally (78% of the sample came from the Army Lead Refinement Lists and thus, most of the sample may have been actively pursued for recruiting or had inquired about the Army).
- The authors regressed the aforementioned variables onto career intentions (Army, college, and job) and were able to explain between 46% and 61% of the variance in each criterion.
- For each criterion, the predictors with the largest standardized beta weights were attitudes toward the career choice (β 's ranged from .29 to .37) and social influences on career choice (β 's ranged from .35 to .54)

Zirk, D. A., McTeigue, R. J., Wilson, M., Adelman, L., & Pliske, R. (1987). *Alternative approaches to modeling the individual enlistment decision: A literature review* (Research Report 738). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A184 498]

Model Category: Enlistment Decision
Service: U.S. Army

- Various theories and models from psychology and career and consumer decision-making research were reviewed to determine the model(s) most appropriate to use for investigating the individual enlistment decision.

- The authors decided that the Fishbein and Ajzen Expectancy Theory model was best because it: (1) has behavioral intent as the dependent variable, (2) accounts for social and cognitive influences, (3) includes an affective component, and (4) it "facilitates a multi-measurement approach for triangulating on decision model components."

Wilson, M. J., Greenlees, J. B., & Lehnus, J. D. (1999, November). *Reasons for and barriers to enlistment*. Paper presented at the 41st Annual Conference of the International Military Testing Association, Monterey, CA.

Model Category: Enlistment Decision

Service: U.S. Armed Forces

- Using data from the YATS from 1996 to 1998, the authors compiled responses to open-ended questions that asked youth to give their main reasons for considering joining the military and the main reasons they would not consider enlisting. Participants were asked both questions whether or not they indicated positive propensity to enlist.
- Money for education was the most frequently cited reason for enlisting (32% of men, 37% of women). Job training (24% of men, 17% of women) and duty to country (13% of men, 9% of women) were also mentioned frequently.
- The reasons given most frequently for not considering military service among men were perceived military lifestyle (19%), other career interests (13%), threat to life (11%), and long commitment (11%). Among women, the most frequently cited reasons were military lifestyle (25%), family obligations (16%), other career interests (10%) and threat to life (10%).
- A second sample of youth from the YATS was asked whether their interest in the military has increased or decreased in the prior year and why. The reasons given for increased interest were similar to the reasons for enlisting (e.g., money for education, job training), and the reasons for decreased interest were similar to the reasons for not enlisting (e.g., other career plans, school, dislike military).
- However, 15% of men and 21% of women cited talking with military members, veterans or recruiters as a reason for their increased interest in the military during the prior year.

HQ Air Force Recruiting Service Market Research Branch. (1999). *FY99 Basic Military Training Survey Report*. Randolph Air Force Base, TX.

Model Category: Enlistment Decision; Marketing

Service: U.S. Air Force

- Results of the FY1999 Basic Military Training (BMT) Survey Program were described in this report. This program includes two surveys, one that focuses on recruiting programs and practices (BMT Survey) and another that focuses on advertising (BMTA Survey).
- The BMT and BMTA surveys were administered to Air Force basic trainees during their sixth week of training ($N = 1,751$ and $1,851$ respectively) and the results are reported together.
- The sample was predominantly male (75%), and the racial composition reflected that of the general population. Thirty-four percent of the trainees were employed full-time when they applied for the Air Force, another 32% were in high school, and 15% were in college.

- A large majority (83%) followed a college preparatory curriculum in high school and 89% were participating in the Montgomery GI Bill. Forty-four percent indicated that they probably would have attended college full-time if they had not joined.
- Family members and close friends who had served or were on active duty in the Air Force appeared to influence the decision to join. Fifty-one percent of respondents' fathers had served in the military and 71% of respondents indicated they had friends and family members who had served and encouraged them to join.
- The top four reasons given for joining the Air Force were: (1) "to continue education on active duty" (40%); (2) "to gain experience for civilian employment" (34%); (3) "to be trained in a skill" (27%); and (4) "to be independent" (27%). The benefits most influential in the enlistment decision were education programs, job/skill training, health care benefits, and pay.
- The "Aim High-Air Force" advertising theme had the most impact on respondents; most respondents first saw or heard Air Force advertising on television. Internet use among respondents was high (84%). Twenty percent had visited the "Air Base Home Page."
- Participation in Center of Influence events appeared to increase interest in the Air Force among respondents. Recruiter-sponsored meals with a presentation had the highest participation rates (41%), followed by an arranged Air Force Base tour (21%). The Base tour generated the highest average increase in interest ratings.
- Sixty-eight percent of respondents made the initial contact with an Air Force recruiter and 35% had contact with at least one recruiter from another service. However, other service recruiters made the initial contact approximately 75% of the time. Overall, ratings of recruiters were very favorable, though ratings for the accuracy of information given about basic training and Air Force life were average.
- Finally, the Recruiter Assistance Program (RAP), wherein a recent technical school graduate assists recruiters for two weeks in their hometown, appeared to be effective. Eighty percent of respondents who had discussed basic training with a RAP assistant said the assistant was moderately to very helpful; 80% indicated they would like to participate as a RAP assistant after technical school.

Morrison, D. R., & Myers, D. E. (1998). *Factors influencing the enlistment aspirations and decisions of Hispanic, Black and White male youth* (Research Note 98-19). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A349 410]

Model Category: Enlistment Decision; Youth Supply, Characteristics, & Influencers
Service: U.S. Army

- This study explored factors that influenced male youth plans to enlist in the military and actual enlistment behavior after high school. The authors were particularly interested in Hispanics because they were (and still are) the fastest growing ethnic group.
- Senior and sophomore male high school students were interviewed in the spring of 1980, and at follow-up in '82, '84, and '86 ($N = 9,000$) as part of the High School and Beyond study.
- The authors used multivariate analyses (probit and ordinary least squares regression) to determine the impact of the variables on military aspirations and enlistment.

- In general, family income, expected wages, and the local labor market were negatively related to military aspirations. However, Hispanic and White enlistees tended to come from families with fewer economic resources than did Black enlistees.
- Enlistees were more likely to come from female-headed families than the general population (27% vs. 22%). This was especially true for White males (23% vs. 13%).
- Contrary to other research, the authors reported that propensity to enlist was not a strong predictor of actual enlistment behavior. Less than one-third of the youth that reported they expected to be in the military (armed services or service academy) actually were in military service two years after graduation.
- Among Hispanics, ethnic identification (whether they spoke Spanish at home, with companions at school or in the community) did not differentiate those who chose the military from those who chose other alternatives.
- Educational expectations of enlistees were high. One half of enlistees intended to attend college some day versus one third of individuals in civilian jobs.
- For Hispanics, expected age of first marriage was positively related to enlistment, while expected age of having their first child was negatively related to enlistment. The authors were unsure as to the meaning of these results.

Tarver, S. M., Miller, A. E., & Ginexi, E. M. (1994). *A qualitative evaluation of reasons for enlisting in the military: Interviews with new active-duty recruits*. Arlington, VA: Defense Manpower Data Center, Program Evaluation Branch. [AD A293470]

Model Category: Enlistment Decision; Youth Supply, Characteristics, & Influencers
Service: U.S. Army

- The authors conducted interviews and focus groups with 200 enlistees in 1990 and identified "frequently mentioned motivations underlying... the enlistment decision." They eight motives identified were: (1) historical interest; (2) self-improvement; (3) job/skill training; (4) money for education; (5) floundering (lack of goals/direction); (6) time-out (to develop a career/life strategy or plan); (7) get away/escape; and (8) no other jobs/prospects.
- Other factors cited, but less frequently, included service benefits, enlistment incentives, opportunity to travel, and recruiter behavior (positive & negative).

Nord, R. D., Schmitz, E. J., & Weiland, T. A. (1986). *Propensity and the enlistment decision* (Research Report 723). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A178 844]

Model Category: Enlistment Decision; Propensity
Service: U.S. Army

- The authors attempted to model the relationship between propensity and enlistment behavior by examining several factors including socio-demographic characteristics and educational expectations.
- The data were taken from the National Longitudinal Survey of Labor Force Experience, Profile of American Youth sample. This survey followed a sample of 12,686 youth age 14-22 from 1979-83. Of the sample, 655 joined the military.

- Logistic regression results indicated that propensity to enlist most strongly predicts enlistment behavior. Males, Blacks, and individuals wanting additional training outside of school were all more likely to enlist than females, Whites, and individuals who did not want additional training. Individuals who had a strong negative intent to enlist were less likely to enlist than individuals who expressed mildly negative intent.
- The findings also indicated that enlistees experienced an increase in educational expectations. It could have been that their high expectations lead to enlistment, or the increase may have come about as educational benefits were discussed in the enlistment process.
- Also, enlistees did not always enlist in the service in which they intended to enlist. Although all Air Force enlistees had intended to enlist in the Air Force, most Navy recruits had intended to enlist in the Air Force, and most Army recruits had intended to enlist in the Navy.
- The AFQT showed a curvilinear relationship with enlistment rates, where enlistment rates declined above an AFQT percentile of 55 after propensity was controlled. The authors note that these results suggest that the labor market and educational opportunities affect enlistments in addition to simple propensity.

Robert, D. W. (1993). *Navy New Recruit Survey (NRS)* (TN 94-9). San Diego, CA: Navy Personnel Research and Development Center. [AD A274 000]

Model Category: Enlistment Decision; Marketing
Service: U.S. Navy

- A survey designed to assess the impact of advertising, recruiters, and enlistment incentives was administered to 3,950 male and 970 female recruits at Navy Recruit Training Centers on three occasions from July 1990 to January 1991.
- In general, the top five reasons reported for enlisting were: (1) for high-tech training; (2) in preparation for a civilian job; (3) to travel and see the world; (4) to serve my country; and (5) to provide benefits for present/future dependents. High-tech training and preparation for a civilian job were more likely to be reported by male recruits, whereas travel was more likely to be reported by recruits that were female, younger (17-20 years old), and in lower AFQT mental categories.
- Thoughts about joining the Navy began before the senior year of high school for 84% of the sample. Recruits were more likely to be encouraged to enlist by friends or relatives in the Navy, and more likely to be discouraged by civilian friends and spouses.
- Recruiters had the strongest influence on the enlistment decision. Recruits reported that recruiter visits (32%), phone calls (43%), and discussions of opportunities based on ASVAB scores (56%) had much to very much influence on their decision to enlist.
- A smaller percent of recruits reported that Navy brochures (26%), mail ads (26%), television ads (26%), and movies (e.g., "Top Gun") or TV shows (24%) had much to very much influence on their enlistment decision.
- The author recommended that Navy advertising should emphasize several reasons to join since there is no single most important reason. He also recommended that the Navy maximize the number of sites at which to administer the ASVAB. This would allow them to capitalize on the strong influence recruiters have when they tell applicants of the opportunities available to them based on their ASVAB scores.

Nieva, V. F., Berkowitz, S., & Hintz, W. (1996, November). *Career decisionmaking: Youth futures in context*. Paper presented at the 38th Annual Conference of the International Military Testing Association, San Antonio, TX.

Model Category: Enlistment Decision

Service: U.S. Armed Forces

- Using telephone interviews with 17-21 year-old male YATS respondents ($N=120$), the authors attempted to identify patterns in career decision-making and determine how military recruiting could take advantage of these patterns.
- Youth were grouped into one of three categories based on several factors, but particularly their parents' socioeconomic status.
- Group 1 individuals were middle and upper-middle class, self-directed, generally college-bound, and had parents who were college graduates. According to the authors, this group would most likely be interested in ROTC or in one of the military academies.
- Group 2 individuals' careers were constrained by limited resources (e.g., financial, personal support, information), family obligations (e.g., children, ill parent), or other factors and did not make realistic career decisions. The authors felt that these youth would be most receptive to the structure, discipline, and escape offered by military service.
- Group 3 individuals were demographically similar to those in Group 2, but were more goal oriented and often pursued college, although they may have had financial difficulty. Emphasizing the educational and financial benefits, the physical challenge, and potential respect from others may be effective means to reach this group.

Wilson, M. J., Gay, N. L., Allen, B. F., & Celeste, J. F. (1988). *The Army enlistment decision: A selected annotated bibliography* (Research Note 88-65). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A197 914]

Model Category: Enlistment Decision

Service: U.S. Army

- The authors summarized marketplace/economic and motivational studies regarding the enlistment decision.
- Overall, the authors found that the literature on military/civilian pay ratios produced mixed results.
- Patriotism, family tradition, challenge, duty to one's country, and the chance to better oneself were identified in several studies as reasons for youths to consider Army enlistment. Economic factors such as unemployment, training for civilian employment, and enlistment bonuses also appear to influence Army enlistment motivation.

Elig, T. W., Johnson, R. M., Gade, P. A., & Hertzbach, A. (1984). *The Army enlistment decision: An overview of the ARI recruit surveys, 1982 and 1983* (Research Report 1371). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A164 230]

Model Category: Youth Supply, Characteristics, & Influencers; Enlistment Decision

Service: U.S. Army

- During two excellent years for recruiting, 1982 and 1983, NPS Army recruits ($N = 6,318$ in 1982 and $N = 8,341$ in 1983) were surveyed in the spring and summer to find out why they enlisted and what advertising and recruiting practices were related to their decision. The findings were compared to a DoD survey from 1979, a bad recruiting year.
- The authors reported decreases from 1979 to 1982 in the percentage of respondents indicating their primary enlistment motive as self-improvement (39% to 30%) or skills training (26% to 20.5% for spring 1982, but it increased to 35% for summer '82). However, increases were reported in the primary enlistment motives of money for college (7% to 17.5%) and escaping unemployment (4% to 10%).
- The availability of a 2-year enlistment contract, as opposed to 3 and 4-year options served to have an impact on enlistment. The authors reported that 57% of recruits would not have enlisted if there were no 2-year contract option.
- The ACF also influences enlistment. The authors reported that 35% of recruits eligible for the ACF would not have enlisted if it was not available and 13% of ACF-eligible recruits enlisted in hard-to-fill MOSs in order to receive ACF benefits. These findings were especially important as recruits eligible for the ACF are of higher quality since they are college-bound.
- Analyses of the TV viewing habits of recruits suggests that NFL and college football games would be a good choice for advertising spots due to their large appeal across demographics. However, these results are 15 years old and may need to be updated.

Schmitz, E. J., & Nelson, A. (1984). *Modeling the enlistment process for personnel planning* (Research Report 1416). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A174 842]

Model Category: Enlistment Decision

Service: U.S. Army

- The researchers examined the flow of personnel through the enlistment process, from initial application to accession, in order to project future accessions from applicant flow.
- Personnel proceed through the enlistment process by passing the following hurdles: (1) application, (2) mental qualification, (3) physical qualification, (4) sign contract (either directly enlist or enter DEP), and (5) accession/begin enlistment period.
- From FY81-FY82, 55% of the 765,673 individuals who completed an application met the mental and physical requirements and 69.4% of those qualified signed an enlistment contract. Thus, 38.2% of those who applied actually signed a contract.
- Only a small percentage of enlistees (1.8%) directly enlisted (i.e., began their enlistment period immediately after they signed their contract); the remaining enlistees entered the DEP program. Ten percent of enlistees in DEP failed to access.
- The time between completing the initial application and signing a contract ranged from 0-365 days. More than half (52.6%) of applicants signed a contract within one week of completing an application.
- Other analyses indicated that White applicants and applicants in higher AFQT categories were less likely to enlist than non-White applicants and applicants in lower AFQT categories.

DEP Stay/Leave

Ogren, M. A. (1999). Delayed Entry Program attrition: A multivariate analysis. Unpublished master's thesis, Naval Postgraduate School, Monterey, CA. [AD A366 840]

Model Category: DEP Stay/Leave

Service: U.S. Armed Forces

- Previous studies have indicated that individual characteristics (e.g., age, gender, race, education) and economic variables (e.g., unemployment) are the best predictors of DEP attrition. This study reexamines the impact of these variables on DEP attrition using data from FY1991-96 for all of the U.S. Armed Forces ($N = 965,701$).
- The author used binary logit regression that included gender, race, whether or not the individual had dependents, age at DEP entry, AFQT category, waiver status (i.e., whether or not an individual required a waiver for entry), months spent in DEP, education level, year of DEP entry, and county-level unemployment to predict DEP attrition.
- Most of the findings were consistent with previous research. For example, attrition was more likely if an individual was female, a high school senior rather than a high school graduate, spent more time in DEP, and had no dependents. Although the coefficient for local unemployment was significant and negative, its effect was not large.
- The data also indicated that individuals who received a moral waiver (e.g., due to felony, non-minor misdemeanor, pre-service drug use or minor traffic violations) were less likely to depart from DEP. However, the author points out that those individuals requiring a moral waiver must demonstrate stronger qualifications to be accepted.
- The most common reasons given for DEP attrition across services by males were "apathy/personal problem/refused to enlist" (37.9%), medical (14.1%), and moral (12.8%). For females, the most common reasons were "apathy/personal problem/refused to enlist" (49.3%), medical (3.6%), and pregnancy (13.3%).
- The Air Force had the lowest overall attrition rates (10-12%), while the Marine Corps had the highest (20%), although 11% and 5% respectively of males and females dropped out of the Marines to enlist in the Marine Corps Reserve or Individual Ready Reserves.
- The author recommended that exit interviews be conducted with DEP attritees to determine more specific reasons for leaving and that recruiters focus more effort on individuals with higher likelihood of attrition.

Nakada, M. K. (1994). *Delayed Entry Program (DEP) attrition: Recruits, recruiters, contracts, and economics* (TR 95-3). San Diego, CA: Navy Personnel Research and Development Center. [AD A288 576]

Model Category: DEP Stay/Leave

Service: U.S. Navy

- The purpose of this research was to identify factors important to Navy DEP attrition and to develop a model to forecast attrition.
- A logit model to predict a dichotomous criterion of DEP stay/leave was developed. The variables included in the model were chosen based on previous research and grouped into

five categories: (1) recruit attributes (e.g., high school status, age, gender, race, AFQT); (2) DEP contract variables (e.g., DEP length, month entered DEP, changes to contract); (3) recruiter variables (e.g., race, gender, paygrade, time in recruiting); (4) economic variables (e.g., unemployment, advertising dollars spent); and (5) control variables (e.g. urban/rural, population density).

- Data were available for 296,551 individuals who enlisted in the Navy DEP between May 1987 and June 1992. Of these, 84.8% eventually entered the Navy, while 15.2% did not. The model was developed on 20% of the sample and validated on the remaining 80%.
- With respect to recruit characteristics, results were similar to other DEP research. Specifically, lower attrition rates were likely for males, Blacks, younger recruits, high school graduates, and recruits with higher AFQT scores.
- The probability of attrition was found to increase as DEP length increased and with changes in the DEP contract. The only significant recruiter variable was paygrade. Recruits were more likely to stay if their recruiter was an E-7 or higher.
- Additional results suggested that attrition is more likely when unemployment is low, when the recruit lives far from a recruiting station, and when the recruit lives in a densely populated area.
- Results of the validation revealed that the model predicted recruits would stay in 99% of the cases, when the actual survival rate was 85%. The authors attributed this outcome to the homogeneity of the sample.
- This study expands upon previous research in that it examined the impact of recruit, recruiter, contract, and economic characteristics on DEP attrition together in a single study.

Matos, R. E. (1994). *U.S. Navy's Delayed Entry Program: Effects of its length on DEP loss and first term attrition*. Unpublished master's thesis, Naval Postgraduate School, Monterey, CA. [AD A280 128]

Model Category: DEP Stay/Leave

Service: U.S. Navy

- The author examined the effect that time in the DEP has on DEP and in-service attrition using data from 288,171 non-prior service Navy DEP contracts from FY1988-90.
- The average DEP loss rate from FY1988-90 was 15.7%. The author reported DEP attrition for this time period was higher for females (24.5%) than males (14.4%) and was higher for high school seniors (21.2%) and graduates (12.8%) than individuals with a GED (11.6%) or non-graduates (9.7%).
- A non-linear relationship was found between DEP length and DEP attrition. DEP attrition increased steadily from 11% to 24% during the first eight months, then fell to approximately 11% at the tenth month and increased to 23% by the twelfth month.
- Interestingly, attrition during boot camp shows an inverse relation to time in DEP, (i.e., attrition is lower for those who were in the DEP for a relatively long time).
- Conditional probabilities were computed for each gender and mental category for attrition from the DEP, boot camp, and in-service as a function of DEP length.
- Results indicated that non-high school graduates in AFQT categories I-III had higher attrition rates during boot camp and within two years of service than upper (I-IIIU) and lower (IIIL-IV) AFQT category, high school graduates.

- Based on these findings, the author recommended the Navy recruit more high quality high school graduates and fewer non-high school graduates to reduce in-service attrition.
- He also recommended that contracts with high school seniors be made, if possible, in the middle of the school year instead of at the beginning to reduce time in the DEP and DEP attrition risk.

Nelson, A. (1988). *Delayed Entry Program (DEP) loss behavior* (Technical Report 823). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A205 400]

Model Category: DEP Stay/Leave
Service: U.S. Army

- The DEP is a recruiting mechanism used by all of the services that allows individuals to sign an enlistment contract and to delay reporting for active duty for up to 12 months. Losses from DEP have become a problem. The author developed two models of DEP loss.
- A time-series model was estimated using FY1984-87 data to examine the contribution of various factors to DEP loss. Results indicated that the youth unemployment rate, average DEP length, and number of individuals enrolled in DEP per recruiter all had a significant influence on DEP loss, $R^2 = .70$ (all coefficients $p < .01$). The estimated regression equation indicated that a decline in the youth unemployment rate accounted for 39% of the DEP loss rate increase between FY86 and FY87.
- The second model used logistic regression to determine the factors that influence an individual's DEP loss behavior. Results indicate that DEP length and age are positively related to DEP loss. The DEP loss probability increases at a steady rate for high school seniors, but increases substantially after six months for high school graduates. AFQT score was negatively related to DEP loss, that is, the individuals with higher AFQT scores were less likely individuals to become a DEP loss.

Kearl, C. E., & Nelson, A. (1990). *Delayed Entry Program (DEP) attrition: A microdata model* (Technical Report 889). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A223 800]

Model Category: DEP Stay/Leave
Service: U.S. Army

- This research was an extension of the Nelson (1988) study. Using binary logistic regression, the authors estimated the effects of personal characteristics (age, gender, race, dependent status, high school status and AFQT score), recruiting tools (DEP length, Army College Fund, enlistment bonus, and term of enlistment), and economic factors (unemployment rate, relative military/civilian wages) on DEP loss during FY86-87. The sample was comprised of all individuals who signed enlistment contracts during FY86-87 ($N = 234,514$).
- Results indicated that the personal characteristics of DEP recruits had the largest influence on DEP loss. Those at high-risk of being a DEP loss were more likely to be older, female, White, without dependents, and without a high school diploma.

- Environmental factors also influenced the DEP loss rate. The authors stated that the economy strongly influences DEP loss and that enlistment incentives (ACF, enlistment bonus, increased training) had a small but significant impact on DEP loss.
- The length of DEP also contributed to attrition. The longer the DEP, the more likely a recruit would be a DEP loss.

Phillips, C. E., & Schmitz, E. J. (1985). *A microdata model of delayed entry program (DEP) behavior* (Research Report 666). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A172 062]

Model Category: DEP Stay/Leave

Service: U.S. Army

- The authors used maximum likelihood logistic regression to model the effects of several variables on DEP loss behavior.
- Results indicated that DEP length, gender, and age were the strongest predictors of DEP loss. As age of the applicant and DEP length increased, the probability of DEP loss increased. (However, the authors noted that longer DEP periods were associated with lower attrition rates.) Females were also more likely to leave the DEP program.
- Although AFQT score, enlistment incentives (e.g., Army College Fund, enlistment bonus), and enlistment options (e.g., training of choice, station of choice) were included in the regression, they were not significantly related to DEP loss.
- Subsequent comparisons of high school seniors, graduates, and high school dropouts revealed that overall, high school seniors had lower loss rates than high school graduates or non-high school graduates. Male high school seniors had the lowest loss rate while female high school graduates had the highest.
- The authors suggest that recruiters could use these data to target individuals at highest risk for DEP loss for increased monitoring during the DEP period.

Murray, M. M. (1985). *Navy Delayed Entry Program attrition analysis*. Unpublished master's thesis, Naval Postgraduate School, Monterey, CA. [AD A159 763]

Model Category: DEP Stay/Leave

Service: U.S. Navy

- This work examined the impact of recruit characteristics on attrition from the DEP. Data were compiled from the Military Enlisted Processing Command for Navy, non-prior service males who signed an enlistment contract in FY1980 and FY1983 ($N = 193,698$).
- The authors used logistic regression to predict DEP attrition using size of the DEP, months in the DEP, recruiting district, age, mental group, race, and educational level as predictors.
- All of the predictors, except race, significantly predicted DEP attrition. Specifically, older individuals who were non-high school graduates, in the upper mental group, in the DEP seven months or longer, and entered the DEP in fiscal years when the DEP size was over 47,000 nationally, were more likely to attrit from DEP.
- The author suggested that this information could be used to manage DEP contract lengths. For example, an 18-year old high school graduate in an upper mental category should be placed in the DEP for less than seven months to decrease his/her risk of attrition.

Index of Literature Reviewed

- Achatz, M. (1998, November). Understanding women's propensity: Perspectives from in-depth interviews. In D. McCormick (Chair), *Current Findings from the 1997 Youth Attitude Tracking Study (YATS)*. Symposium conducted at the 40th Annual Conference of the International Military Testing Association, Pensacola, FL..... 97
- Alderton, D. L., Blackstone, T. F., Mottern, J. A., & Watson, S. E. (1999, November). Three faces of attrition: Recruiting, the recruit, and the Navy. In S. R. Truscott (Chair), *Strategic Approaches to Recruiting*. Symposium conducted at the 41st Annual Conference of the International Military Testing Association, Monterey, CA..... 43
- Arima, J. K. (1977). *Determinants and a measure of Navy recruiter effectiveness* (TR 78-21). San Diego, CA: Navy Personnel Research and Development Center. [AD A055 800] 54
- Asch, B. J., & Hosek, J. R. (1999). *Military compensation: Trends and policy options*. Santa Monica: RAND National Defense Research Institute. [AD A364 082] 77
- Asch, B. J., Kilburn, M. R., & Klerman, J. A. (1999). *Attracting college-bound youth into the military: Toward the development of new recruiting policy options*. Santa Monica, CA: RAND National Defense Research Institute. 41
- Atwater, D. C., Abrahams, N. M., & Trent, T. T. (1986). *Validation of the Marine Corps Special Assignment Battery (SAB)*. San Diego, CA: Navy Research and Development Center. [AD A168 280]..... 17
- Aunins, A. E., Sander, K. E., Giannetto, P. W., & Wilson, S. J. (1990). *Navy Recruiter Survey: Content analysis of free response data* (TR 90-14). San Diego, CA: Navy Personnel Research and Development Center. [AD A240 450]..... 37
- Bachman, J. G., Freedman-Doan, P., Segal, D. R., & O'Malley, P. M. (in press). Distinctive military attitudes among U.S. enlistees, 1976-1997: Self-selection versus socialization. *Military Psychology*..... 73
- Bachman, J. G., Segal, D. R., Freedman-Doan, P., & O'Malley, P. M. (1998a). Does enlistment propensity predict accession? High school seniors' plans and subsequent behavior. *Armed Forces and Society*, 25(1), 59-80..... 90
- Bachman, J. G., Segal, D. R., Freedman-Doan, P., & O'Malley, P. M. (1998b). *Military propensity and enlistments: Cross-sectional and panel analyses of correlates and predictors*. Monitoring the Future Occasional Paper Series 41, Ann Arbor, MI: University of Michigan, Institute for Social Research. 90
- Bachman, J. G., Segal, D. R., Freedman-Doan, P., & O'Malley, P. M. (in press). *Who chooses military service? Correlates of propensity and enlistment in the United States Armed Forces*. Unpublished paper. Institute for Social Research, University of Michigan. 91
- Baker, H. G. (1990). *Navy Recruiting Comprehensive Stress Management Program I. The stress of recruiting duty* (TN-90-31). San Diego, CA: Navy Personnel Research and Development Center. [AD A225 429]..... 37

Baker, H. G., Somer, E. P., & Murphy, D. J. (1989). <i>Navy Recruiter Survey: Management overview</i> (TR 89-16). San Diego, CA: Navy Personnel Research and Development Center. [AD A211 732].....	36
Baker, T. A. (1990). <i>A cross-sectional comparison of Army advertising attributes</i> (Research Report 1578). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A233 737].....	60
Barfield, L. C. (1993). <i>An analysis of enlisted Navy recruiter productivity and incentive programs, FY 1988 - FY 1990</i> . Unpublished master's thesis, Naval Postgraduate School, Monterey, CA. [AD A273 154]	52
Barnes, J., Dempsey, J., Knapp, D., Lerro, P., & Schroyer, C. (1991). <i>Summary of military manpower market research studies: A technical report</i> (FR-PRD-91-08). Alexandria, VA: Human Resources Research Organization. [AD A244 938]	71
Baxter, S., & Gay, N. L. (1988). <i>The message content of advertisements for active Army enlistments</i> (Research Report 1473). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.....	59
Benedict, M. E. (1987). <i>The 1986 ARI survey of U.S. Army recruits: Technical manual</i> (Technical Report 735). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A182 738].....	76
Benedict, M. E. (1989). <i>The soldier salesperson: Selection and basic recruiter training issues in the U.S. Army</i> (Research Report 1534). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A212 827].....	22
Bennett, C. (1999). Outside in inside out society meets military: Who gives way? In S. R. Truscott (Chair), <i>Strategic Approaches to Recruiting</i> . Symposium conducted at the 41 st Annual Conference of the International Military Testing Association, Monterey, CA.	39
Borman, W. C. (1979). <i>Development of an assessment program for selecting Army recruiters</i> (Technical Report 33). Minneapolis, MN: Personnel Decisions Research Institute.....	18
Borman, W. C. (1982). Validity of a behavioral assessment for predicting military recruiter performance. <i>Journal of Applied Psychology</i> , 67(1). See also Borman, W. C., & Fischl, M. A. (1980). Evaluation of an Army recruiter assessment program (Technical Report 57). Minneapolis, MN: Personnel Decisions Research Institute.	20
Borman, W. C., & Fischl, M. A. (1981). <i>Recruiter assessment center: Candidate materials and evaluator guidelines</i> (Research Product 81-10). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.	20
Borman, W. C., Hough, L. M., & Dunnette, M. D. (1976). <i>Development of behaviorally based rating scales for evaluating the performance of U. S. Navy recruiters</i> (NPRDC Technical Report 76-31). San Diego, CA: Navy Personnel Research and Development Center.	48
Borman, W. C., Rose, S. R., & Rosse, R. L. (1985). <i>Identifying persons likely to be successful at recruiting minorities for the Navy</i> (Institute Report 98). Minneapolis, MN: Personnel Decisions Research Institute.....	18

- Borman, W. C., Rosse, R. L., & Rose, S. R. (1982). *Predicting performance in recruiter training: Validity of assessment in the recruiter development center* (Technical Report 73). Minneapolis, MN: Personnel Decisions Research Institute. 20
- Borman, W. C., Rosse, R. L., & Toquam, J. L. (1978). *Investigating personality and vocational interest constructs and their relationships with Navy recruiter performance* (Institute Report 24). Minneapolis, MN: Personnel Decisions Research Institute. 16
- Borman, W. C., Rosse, R. L., & Toquam, J. L. (1982). *The impact of environmental factors and consideration of recruit quality on Navy recruiter production* (Institute Report 78). Minneapolis, MN: Personnel Decisions Research Institute. 68
- Borman, W. C., Rosse, R. L., Toquam, J. L., & Abrahams, N. M. (1981). *Development and validation of a recruiter selection battery* (81-20). San Diego, CA: Navy Personnel Research and Development Center. [AD A104 681] 16
- Borman, W. C., Russell, T. L., & Skilling, N. J. (1986). *Development of behavior-based rating scales and analysis of recruiter selection battery data for the Army recruiter job* (ARI Research Report 1441). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A184 497]..... 48
- Borman, W. C., Toquam, J. L., & Rose, S. R. (1982). *Evaluation of three programs to assist Navy recruiters* (Institute Report 75). Minneapolis, MN: Personnel Decisions Research Institute. 39
- Borman, W. C., Toquam, J. L., & Rosse, R. L. (1976). *Dimensions of the Army recruiter and guidance counselor job* (Technical Report 10). Minneapolis, MN: Personnel Decisions Research Institute. 48
- Borman, W. C., Toquam, J. L., & Rosse, R. L. (1978). *Development and validation of an inventory battery to predict Navy and Marine Corps recruiter performance* (Institute Report 22). Minneapolis, MN: Personnel Decisions Research Institute. [AD A069 371] 16
- Brogden, H. E., & Taylor, E. K. (1949). *The validity of recruiter selection instruments at various points of cut* (Report No. 781). Washington, DC: Personnel Research Section: U.S. Army Adjutant General's Office..... 27
- Brown, C. (1984). *Military enlistments: What can we learn from geographic variation* (Technical Report 620). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A165 663] 82
- Brown, G. H., Wood, M. D., & Harris, J. D. (1975). *Army recruiters: Criterion development and preliminary validation of selection procedure* (FR-ED-75-8). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A077 993] 18
- Buchs, T. A. (1994). *Validation and justification of the use of a sales-aptitude test for U.S. Army recruiter selection*. Unpublished master's thesis, Naval Postgraduate School, Monterey, CA. [AD A283 658]..... 23
- Byrnes, P. E., & Cooke, T. W. (1988). *Recruiting efficiency and enlistment objectives: An empirical analysis* (CRM 87-181). Alexandria, VA: Center for Naval Analyses. [AD A196 267] 45

- Chonko, L. B., Madden, C. S., Tanner, J. F., & Davis, R. (1991). *Analysis of Army recruiter selling techniques* (Research Report 1589). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A240 841]..... 29
- Condon, K. M., Dunlap, B. D., Girard, C., Sundel, M., & Feuerberg, G. (1997). *The 1996 DoD Recruiter Survey: Profiles and trends*. Arlington, VA: Defense Manpower Data Center. [AD A335 671]..... 34
- Condon, K. M., & Girard, C. (1998). *Analysis of the 1996 DoD Recruiter Survey comments* (97-020). Arlington, VA: Defense Manpower Data Center. [AD A344 699]..... 35
- Dale, C., & Gilroy, C. (1985a). Determinants of enlistments: A macroeconomic time-series view. *Armed Forces and Society*, 10(2), 192-210. 85
- Dale, C., & Gilroy, C. (1985b). Enlistments in the all-volunteer force. *American Economic Review* 75(3), 547-551. 86
- Dale, C., & Hill, L. G. (1984). *Military and civilian lifetime earnings comparisons* (Technical Report 619). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A148 844]..... 80
- Dandeker, C., & Strachan, A. (1993). Soldier recruitment to the British Army: A spatial and social methodology for analysis and monitoring. *Armed Forces and Society*, 19(2), 279-290. 71
- Daula, T., & Smith, D. A. (1986). Recruiting goals, enlistment supply, and enlistments in the U.S. Army. In C. L. Gilroy (Ed.), *Army Manpower Economics* (pp. 101-126). Boulder, CO: Westview Press..... 69
- Dertouzos, J. N. (1984). *Enlistment supply, recruiter objectives, and the All-Volunteer Army*. Santa Monica, CA: The Rand Corporation. [AD A152 552]..... 53
- Donelan, J. O. (1977). *Investigation of goaling models for Navy recruiting*. Unpublished master's thesis, Naval Postgraduate School, Monterey, CA. [AD A039 650]..... 87
- Drillings, M., & Fischl, M. A. (1999). *Predicting enlistment propensity of young African-Americans*. Washington, DC: University of the District of Columbia, Scientific Parallel Processing Applied Research Center. [AD A372 543] 95
- Elig, T. W. (1988). *Targeting the delivery of Army advertisements on television* (Research Report 1484). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A199 495]..... 60
- Elig, T. W., Johnson, R. M., Gade, P. A., & Hertzbach, A. (1984). *The Army enlistment decision: An overview of the ARI recruit surveys, 1982 and 1983* (Research Report 1371). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A164 230] . 103
- Elig, T. W., Weltin, M. M., Hertzbach, A., Johnson, R. M., & Gade, P. A. (1985). *U.S. Army advertising from the recruits' viewpoint* (Research Report 1407). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A163 824]..... 61
- Eskins, C. J. (1997). *An analysis of advertising effectiveness for U.S. Navy recruiting*. Unpublished master's thesis, Naval Postgraduate School, Monterey, CA. [AD A341 072]... 58

Fernandez, R. L. (1983). <i>Enlistment effects and policy implications of the Educational Assistance Test Program</i> (R-2935-MRAL). Santa Monica, CA: The Rand Corporation. [AD A126 084] .	83
Fisher, A. H., Pappas, L. D., & Shepherdson, S. (1975). <i>Navy recruitment potential in junior colleges</i> (Institute Report 76-1). Washington, DC: Hay Associates. [AD A013 670]	67
Freedman-Doan, P., & Bachman, J. G. (1999). <i>Analysis of linkages between military enlistment plans and behaviors</i> (Research Note 99-12). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A359 848]	89
Freedman-Doan, P., Bachman, J. G., & O'Malley, P. M. (1999). <i>Is there a gap between soldiers and civilians? Comparing the political attitudes of young recruits with their non-service peers, 1976-1997</i> (Research Note 99-19). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.	74
Friedland, J. E., & Little, R. D. (1984). Educational levels, aspirations, and expectations of military and civilian males, ages 18-22. <i>Armed Forces and Society</i> , 10(2), 211-228	76
Frieman, S. R. (1987a). <i>Sales Training for Army Recruiter Success: Interviews with excellent recruiters</i> (Research Product 87-37). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A191 326].....	50
Frieman, S. R. (1987b). <i>Sales Training for Army Recruiter Success: Modeling the Sales Strategies and Skills of Excellent Recruiters</i> (Research Product 87-38). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A191 691].....	50
General Accounting Office. (1994). <i>Military recruiting: More innovative approaches needed</i> . Washington, DC: Author.	44
General Accounting Office. (1998). <i>Military recruiting: DoD could improve its recruiter selection and incentive systems</i> (NSIAD-98-58). Washington, DC: Author.	24
Giambo, P. (1996, November). <i>The Youth Attitude Tacking Study in-depth interviews: Youth knowledge about military life</i> . Paper presented at the 38 th Annual Conference of the International Military Testing Association, San Antonio, TX.....	94
Goldberg, L., & Greenston, P. (1986). Economic analysis of Army enlistments: Policy implications. In C. L. Gilroy (Ed.), <i>Army Manpower Economics</i> (pp. 61-91). Boulder, CO: Westview Press.....	69
Golfin, P. A. (1998). <i>A summary of Navy recruiting efforts in community colleges in FY 1997</i> (CRM 97-139). Alexandria, VA: Center for Naval Analyses. [AD B235 264].....	67
Graf, R. G., & Bower, D. B. (1976). <i>The development of an interest inventory for the selection of Marine Corps recruiters</i> . San Diego, CA: Navy Personnel Research and Development Center.....	24
Hagerty, T., Zucker, A. B., & Lehnus, J. D. (1999, November). <i>Demographic factors and the recruiting environment</i> . Paper presented at the 41 st Annual Conference of the International Military Testing Association, Monterey, CA.	63
Helms, R. O. (1993). <i>Military pay comparability</i> (Executive Research Project S101). Washington, DC: National Defense University, The Industrial College of the Armed Forces. [AD A276 610]	79

Hintze, W., & Lehnus, J. (1996, November). <i>Recognition of military advertising slogans among American youth</i> . Paper presented at the 38 th Annual Conference of the International Military Testing Association, San Antonio, TX.	55
Hintze, W., & Lehnus, J. (1998, November). Media habits and Internet usage among America's youth. In D. McCormick (Chair), <i>Current Findings from the 1997 Youth Attitude Tracking Study (YATS)</i> . Symposium conducted at the 40 th Annual Conference of the International Military Testing Association, Pensacola, FL.	57
Hirabayashi, D. M., & Hersh, R. (1985). <i>Excellence in Navy recruiting: A look at high-performing Navy Recruiting Districts</i> . Unpublished master's thesis, Naval Postgraduate School, Monterey, CA. [AD A168 546].....	38
Hissong, J. B., & Plotkin, H. M. (1998). <i>Successful Recruiter Profile Project</i> . The United States Army Recruiting Command. Contract No. TCN 97-010, Scientific Services Program.	23
Horne, D. K. (1984). <i>An economic analysis of Army enlistment supply</i> (MPPRG Report 84-5). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A176 201].....	86
Hostetler, D. L. (1998). <i>A statistical estimation of Navy enlistment supply models using zip code level data</i> . Unpublished master's thesis, Naval Postgraduate School, Monterey, CA. [AD A346 069].....	70
Howell, R. D., Wilcox, J. B., & Wilkes, R. E. (1988). <i>Modeling the effects of Army advertising</i> (Technical Report 821). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A207 289].....	58
HQ Air Force Recruiting Service Market Research Branch. (1999). <i>FY99 Basic Military Training Survey Report</i> . Randolph Air Force Base, TX.....	99
Hughes, A. O., & Khatri, D. S. (1996). <i>Exploratory research on African-American youth's propensity to join the military</i> (ARI Research Note 96-12). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A307 050].....	96
Hull, G. L., & Benedict, M. E. (1988). <i>The evaluability assessment of the recruiter training program</i> (Research Report 1479). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A197 782].....	28
Hull, G. L., Kleinman, K., Allen, G., & Benedict, M. E. (1988). <i>Evaluation of the US Army Recruiting Command Recruiter Training Program</i> (Research Report 1503). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A206 844].....	28
Hull, G. L., & Nelson, W. A. (1991). <i>Instructional needs analysis of the US Army Recruiting Command (USAREC) on-the-job recruiter training program</i> (Technical Report 1590). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A237 800].....	30
Jacobson, S. (1987). <i>Sales Training for Army Recruiter Success: Interviews with excellent recruiters</i> (Research Report 780). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.....	50

Jarosz, S. K., & Stephens, E. S. (1999). <i>Allocation of recruiting resources across Navy recruiting stations and metropolitan areas</i> . Unpublished master's thesis, Naval Postgraduate School, Monterey, CA. [AD A361 844]	44
Johnston, I. (1999, November). Market testing of the military recruiting function. In S. R. Truscott (Chair), <i>Strategic Approaches to Recruiting</i> . Symposium conducted at the 41 st Annual Conference of the International Military Testing Association, Monterey, CA.	40
Jones, J. E., & Stigler, W. J. (1995). <i>Survey of minority officers in the Navy: Attitudes and opinions on recruiting and retention</i> . Unpublished master's thesis, Naval Postgraduate School, Monterey, CA. [AD A304 973].....	75
Kearl, C. E., & Nelson, A. (1990). <i>Delayed Entry Program (DEP) attrition: A microdata model</i> (Technical Report 889). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A223 800].....	108
Kim, C. H. (1988). <i>Military compensation alternatives for retention of officers in the Republic of Korea Army</i> . Unpublished master's thesis, Naval Postgraduate School, Monterey, CA. [AD A200 624]	80
Lancaster, A. R., & Lehnus, J. (1996, November). <i>Declining interest in military service:Qualitative insights</i> . Paper presented at the 38 th Annual Conference of the International Military Testing Association, San Antonio, TX.....	96
Larriva, R. F. (1975). <i>U. S. Marine Corps recruiter performance prediction study</i> . Unpublished manuscript.	25
Lawrence, G. H., & Legree, P. J. (1996). <i>Military Enlistment Propensity: A review of recent literature</i> (ARI Research Note 96-69). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A319 605].....	89
Legree, P. J., Gade, P. A., Martin, D. E., Fischl, M. A., Wilson, M. J., Nieva, V. F., McCloy, R., & Laurence, J. (2000). Military enlistment and family dynamics: Youth and parental perspectives. <i>Military Psychology</i>	97
Lehnus, J., & Lancaster, A. (1996, November). <i>Declining interest in military service: Quantitative observations</i> . Paper presented at the 38 th Annual Conference of the International Military Testing Association, San Antonio, TX.....	94
Love, K. G., Jex, S. M., Richard, R. L., & McMullin, C. (1991). <i>Organizational assessment to support the USAREC On-the-Job (OJT) Recruiter Training Program</i> (ARI Research Note 91-89). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A237 800].....	30
MacDonald, D. J. (1998). <i>Mainstreaming military compensation: Problems and prospects</i> . Unpublished master's thesis, Naval Postgraduate School, Monterey, CA. [AD A356 517]...	78
Martin, P. E. (1999). <i>A multi-service location-allocation model for military recruiting</i> . Unpublished master's thesis. Naval Postgraduate School, Monterey, CA. [AD A362 162] ...	43
Massey, I. H., & Mullins, C. J. (1966). <i>Validation of the recruiter-salesman selection test</i> . Lackland Air Force Base, TX: Personnel Research Laboratory, Aerospace Medical Division, Air Force Systems Command.....	25

- Matos, R. E. (1994). *U.S. Navy's Delayed Entry Program: Effects of its length on DEP loss and first term attrition*. Unpublished master's thesis, Naval Postgraduate School, Monterey, CA. [AD A280 128]..... 107
- Matser, F. (1996, November). *The role of recruitment and selection in the transition from a regular and conscript army to an all-volunteer force*. Paper presented at the 38th Annual Conference of the International Military Testing Association, San Antonio, TX..... 41
- McAllister, I. (1995). Schools, enlistment, and military values: The Australian Services Cadet Scheme. *Armed Forces and Society*, 22(1), 83-102..... 72
- McManus, T. M. (1994). *An initial analysis of the Navy's Sea College Program*. Unpublished masters thesis, Naval Postgraduate School, Monterey, CA. [AD A225 401]..... 81
- Morey, R. C. (1982). *The tactical allocation of quality recruiting goals across regions and districts: Its use in identifying "exceptional" producers* (ONR-200-5). Durham, NC: Duke University, Fuque School of Business, Center for Applied Business Research. [AD A114 008] 87
- Morey, R. C. (1987). *Impacts of size, composition, and compactness of the Delayed Entry Pool on enlistment contract production: Efficient allocation of recruiting expenditures and optimal DEP management*. Durham, NC: Duke University. [AD A192 941]..... 46
- Morrison, D. R., & Myers, D. E. (1998). *Factors influencing the enlistment aspirations and decisions of Hispanic, Black and White male youth* (Research Note 98-19). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A349 410] 100
- Murray, M. M. (1985). *Navy Delayed Entry Program attrition analysis*. Unpublished master's thesis, Naval Postgraduate School, Monterey, CA. [AD A159 763]..... 109
- Murray, M. P., & McDonald, L. L. (1999). *Recent recruiting trends and their implications for models of enlistment supply*. Santa Monica, CA: RAND National Defense Research Institute. [AD A360 747]..... 64
- Nakada, M. K. (1994). *Delayed Entry Program (DEP) attrition: Recruits, recruiters, contracts, and economics* (TR 95-3). San Diego, CA: Navy Personnel Research and Development Center. [AD A288 576]..... 106
- Nelson, A. (1988). *Delayed Entry Program (DEP) loss behavior* (Technical Report 823). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A205 400] 108
- Nieva, V. F., Berkowitz, S., & Hintz, W. (1996, November). *Career decisionmaking: Youth futures in context*. Paper presented at the 38th Annual Conference of the International Military Testing Association, San Antonio, TX. 103
- Nord, R. D., Schmitz, E. J., & Weiland, T. A. (1986). *Propensity and the enlistment decision* (Research Report 723). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A178 844]..... 101
- O'Connor Boes, J., Wiskoff, M. F., & Flacks, M. (1999). *Hispanic youth and military enlistment propensity*. Monterey, CA: Defense Security Service, Security Research Center. [AD A362 976] 94

- Ogren, M. A. (1999). *Delayed Entry Program attrition: A multivariate analysis*. Unpublished master's thesis, Naval Postgraduate School, Monterey, CA. [AD A366 840]..... 106
- Oken, C., & Asch, B. J. (1997). *Encouraging recruiter achievement: A recent history of military recruiter incentive programs*. Santa Monica, CA: The Rand Corporation. [AD A337 356].... 50
- Okros, A. C. (1999, November). *Attracting and retaining the best: An integrative analysis of future human resources issues and trends*. Paper presented at the 41st Annual Conference of the International Military Testing Association, Monterey, CA. 40
- Orvis, B. R., Gahart, M. T., & Ludwig, A. K. (1992). *Validity and usefulness of enlistment intention information* (92-17157). Santa Monica, CA: RAND National Defense Research Institute. [AD A252 738]..... 92
- Orvis B. R., Sastry, N., & McDonald L. L. (1996). *Military recruiting outlook: Recent trends in enlistment propensity and conversion of potential enlisted supply*. Santa Monica, CA: RAND. [AD A322 262] 62
- Palomba, C. A. (1983). *U.S. Marine Corps Enlistment Bonus Program* (CNR 34). Alexandria, VA: Center for Naval Analysis. [AD A130 596]..... 84
- Perry, S., & Lehnus, J. (1998, November). The Youth Attitude Tracking Study (YATS) in-depth interviews with young women: A methodological overview. In D. McCormick (Chair), *Current Findings from the 1997 Youth Attitude Tracking Study (YATS)*. Symposium conducted at the 40th Annual Conference of the International Military Testing Association, Pensacola, FL. 97
- Phillips, C. E., & Schmitz, E. J. (1985). *A microdata model of delayed entry program (DEP) behavior* (Research Report 666). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A172 062]..... 109
- Pliske, R. M., Elig, T. M., & Johnson, R. M. (1986). *Towards an understanding of Army enlistment motivation patterns* (Research Report 702). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A173 817]..... 83
- Pond, S. B., Powell, T. E., Norton, J. J., & Thayer, P. W. (1992). *Feasibility of using realistic job previews in the Army recruiter training process* (Technical Report 1630). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A257 914] 31
- Pry, D. A. (1996). *An analysis of the U.S. Navy goal-based recruiting system*. Unpublished master's thesis, Naval Postgraduate School, Monterey, CA. [AD A313 516]..... 51
- Recio, M. (1980). *A pilot study to ascertain the attitudes of Navy recruiters and Hispanic youth toward the recruitment of Hispanics in the U.S. Navy*. Arlington, VA: Temple University, Merit Center. [AD A093 061] 77
- Ree, M. J., & Earles, J. A. (1991). *Estimates of available aptitude as a consequence of demographic change* (AL-TP-1991-0019). Brooks Air Force Base, TX: Armstrong Laboratory, Human Resources Directorate. [AD A238 296] 62
- Research Services. (2000). *Air Force website evaluation: Wave III Final Report*. Irving, TX: Bozell Kamstra. 57
- Robert, D. W. (1993). *Navy New Recruit Survey (NRS)* (TN 94-9). San Diego, CA: Navy Personnel Research and Development Center. [AD A274 000]..... 102

- Russell, T. L., & Borman, W. C. (1986). *Predicting military recruiter effectiveness: A literature review* (ARI Research Note 87-23). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A181 830]..... 49
- Schmitz, E. J. (1990). *The Army College Fund and military manpower: A review of existing research* (Technical Report 1572). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A229 049]..... 81
- Schmitz, E. J., & Nelson, A. (1984). *Modeling the enlistment process for personnel planning* (Research Report 1416). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A174 842]..... 104
- Segal, D. R., Bachman, J. G., Freedman-Doan, P., & O'Malley, P. M. (in press). Propensity to serve in the US Military: Temporal trends and subgroup differences. *Armed Forces and Society*..... 91
- Segal, M. W., Segal, D. R., Bachman, J. G., Freedman-Doan, P., & O'Malley, P. M. (1998). Gender and the propensity to enlist in the U.S. Military. *Gender Issues*, 64-87. 91
- Sellman, W. S. (1999, November). Reengineering and privatizing military recruiting in the U.S. Armed Forces. In S. R. Truscott (Chair), *Strategic Approaches to Recruiting*. Symposium conducted at the 41st Annual Conference of the International Military Testing Association, Monterey, CA. 42
- Shavelson, R. J., Haggstrom, G. W., & Blaschke, T. J. (1984). *Two-year colleges and vocational schools as sources of military manpower* (N-2193-MIL). Santa Monica, CA: The Rand Corporation. [AD A149 763]..... 66
- Shavelson, R. J., Haggstrom, G. W., & Winkler, J. D. (1983). *Potential for military recruiting from two-year colleges and postsecondary vocational schools* (N-1946-MRAL). Santa Monica, CA: The Rand Corporation. [AD A126 206]..... 65
- Specialized Advertising Research Services. (1998). *Awareness and attitudes tracking study: Wave III Final Report*. Irving, TX: Bozell, Jacobs, Kenyon, & Eckhardt, Inc. 56
- Tannahill, S. L. (1996). *Navy advertising--from budget to execution, a trend analysis of national advertising awareness*. Unpublished master's thesis, Naval Postgraduate School, Monterey, CA. [AD A312 910]..... 55
- Tarver, S. M., Miller, A. E., & Ginexi, E. M. (1994). *A qualitative evaluation of reasons for enlisting in the military: Interviews with new active-duty recruits*. Arlington, VA: Defense Manpower Data Center, Program Evaluation Branch. [AD A293470]..... 101
- Taylor, J. G., Lindsay, G. F., Manager, B. K., & Weitzman, R. A. (1995). *Development of a model to predict recruiter success (initial results)*. Monterey, CA: Naval Postgraduate School. [AD A300 195]..... 23
- van Gelooven, R. (1998, November). *Soldiers' expectancies, implications for recruitment and job satisfaction*. Paper presented at the 40th Annual Conference of the International Military Testing Association, Pensacola, FL..... 74
- Verdugo, N., & Berliant, K. R. (1989). *Estimating the Army's prime recruiting market* (Research Report 832). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A210 850]..... 65

- Weis, J. S., & Van Steenberg, A. J. (1997). *An assessment of the effects of changing family circumstances on the size and diversity of future military accessions*. Unpublished master's thesis, Naval Postgraduate School, Monterey, CA. [AD A331 223]..... 75
- Weiss, H. M. (1988). *Evaluation of recruiter performance measures and policy* (Research Report 1485). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A201 344]..... 49
- Weiss, H. M., Citera, M., & Finfer, L. (1989). *Evaluation of an Army recruiter selection program* (Research Report 1514). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A210 569]..... 21
- Wilson, M. J., Berkowitz, S., & Lehnus, J. (1996, November). *The meanings of propensity: Perspectives from in-depth interviews*. Paper presented at the 38th Annual Conference of the International Military Testing Association, San Antonio, TX..... 93
- Wilson, M. J., Gay, N. L., Allen, B. F., & Celeste, J. F. (1988). *The Army enlistment decision: A selected annotated bibliography* (Research Note 88-65). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A197 914]..... 103
- Wilson, M. J., Greenlees, J. B., Hagerty, T., & Hintze, D. W. (1998). *Youth Attitude Tracking Study 1997: Propensity and advertising report* (98-011). Arlington, VA: Defense Manpower Data Center. [AD A354 182] 93
- Wilson, M. J., Greenlees, J. B., & Lehnus, J. D. (1999, November). *Reasons for and barriers to enlistment*. Paper presented at the 41st Annual Conference of the International Military Testing Association, Monterey, CA..... 99
- Wilson, M. J., & Lehnus, J. (1996, November). *The future plans and behaviors of YATS youth*. Paper presented at the 38th Annual Conference of the International Military Testing Association, San Antonio, TX..... 92
- Wilson, M. J. & Perry, M. S. (1988). *The career decision survey: Modeling the Army enlistment decision* (Research Report 814). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A203 870]..... 98
- Wollack, L., & Kipnis, D. (1960). *Development of a device for selecting recruiters* (Task assignment PF-016-003-W2). Washington, DC: U.S. Naval Personnel Research Field Activity. 27
- Zirk, D. A., McTeigue, R. J., Wilson, M., Adelman, L., & Pliske, R. (1987). *Alternative approaches to modeling the individual enlistment decision: A literature review* (Research Report 738). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences. [AD A184 498]..... 98
- Zucker, A. B., & George, B. J. (1999, November). *Recruiter quality of life: Results from the 1998 DoD Recruiter Survey*. Paper presented at the 41st Annual Conference of the International Military Testing Association, Monterey, CA. 33